



Energy Management Training: Aligning an EnMS with ISO50001

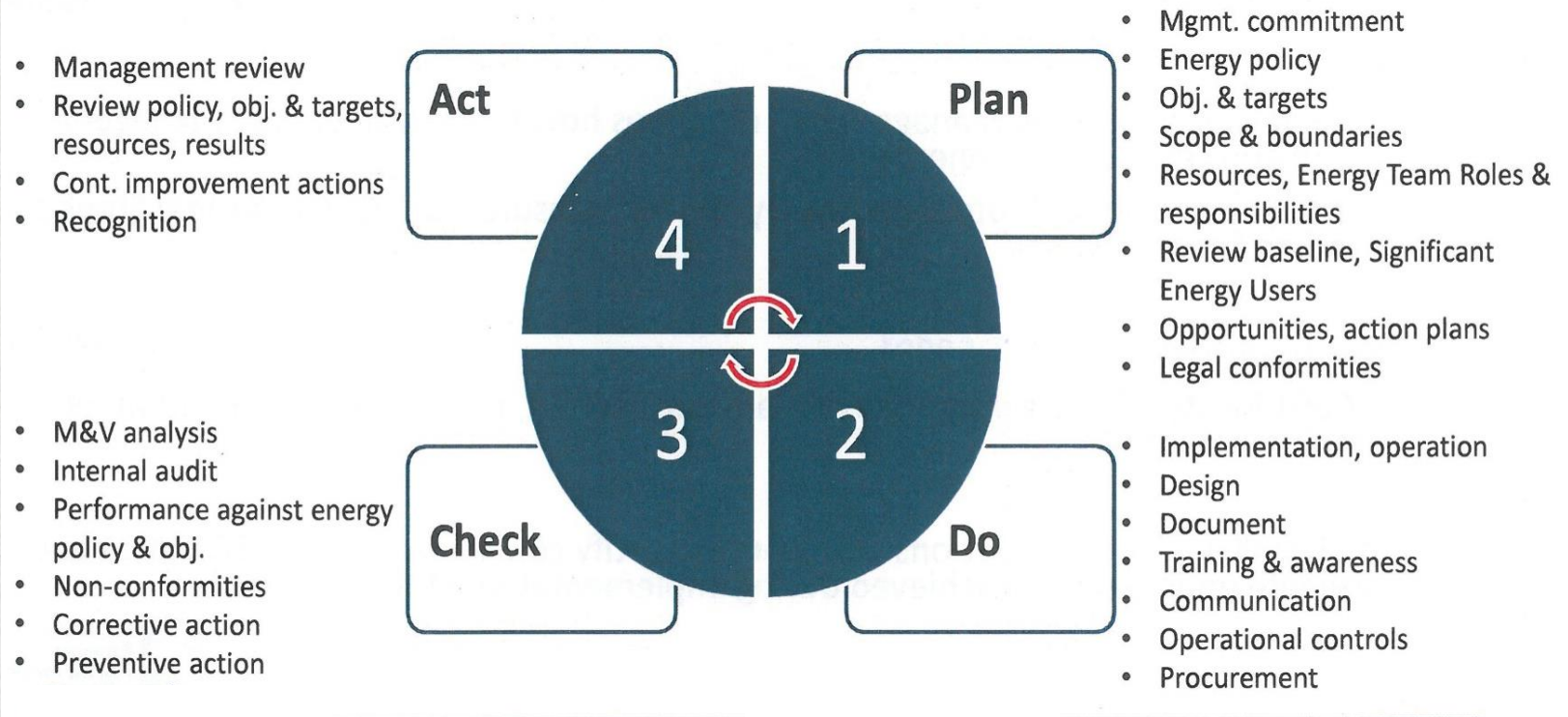


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An Appreciation of ISO50001

- A system for corporate energy management, based on the ISO template of Plan-Do-Check-Act.
- Sets overall system requirements, does not specify solutions.
- Requires sites to set a policy for energy management.
- Requires proper targets and goals to be set.
- Requires data-driven approaches to be used for targeting and decision making.
- Requires use of the standard improvement cycle for driving change.

The ISO50001 System Cycle



ISO50001 Elements (1)

| Clause | Section | Elements |
|--------|-----------------------------|---|
| 0 | Introduction | |
| 1 | Scope | |
| 2 | Normative References | |
| 3 | Terms and Definitions | |
| 4 | Context of the Organisation | 4.1: Understand the organisation and its context. 4.2: Understand the needs and expectations of other parties. 4.3: Scope of the energy management system. 4.4: Description of the energy management system. |
| 5 | Leadership | 5.1: Leadership and commitment. 5.2: Energy policy. 5.3: Roles, responsibilities and authorities. |
| 6 | Planning | 6.1: Actions to address risks and opportunities: Energy review, Legal and other requirements; Energy baseline; Energy performance indicators; Planning action. 6.2: Energy objectives and planning. |

ISO50001 Elements (2)

| Clause | Section | Elements |
|--------|------------------------|--|
| 7 | Support | 7.1: Resources. 7.2: Competences. 7.3: Awareness. 7.4: Communication. 7.5: Documented information: Creating & updating; Control |
| 8 | Operation | 8.1: Operation planning. 8.2: Design. 8.3: Procurement. |
| 9 | Performance Evaluation | 9.1: Monitoring, measurement, analysis and evaluation: Evaluation of compliance. 9.2: Internal audit: Internal audit programme. 9.3: Management review: Management review inputs; Management review outputs. |
| 10 | Improvement | 10.1: Non conformity and corrective action. 10.2: Continual improvement. |

But.....

- The ISO50001 standard is beautifully constructed so that it can be applied to ANY organisation.
- However this means that it is not tailored to any.
- So significant work is required to develop a system that suits the needs of practical businesses.
- ADDC has developed a system of templates that enables manufacturing sites to rapidly develop an EnMS that is aligned with ISO50001.

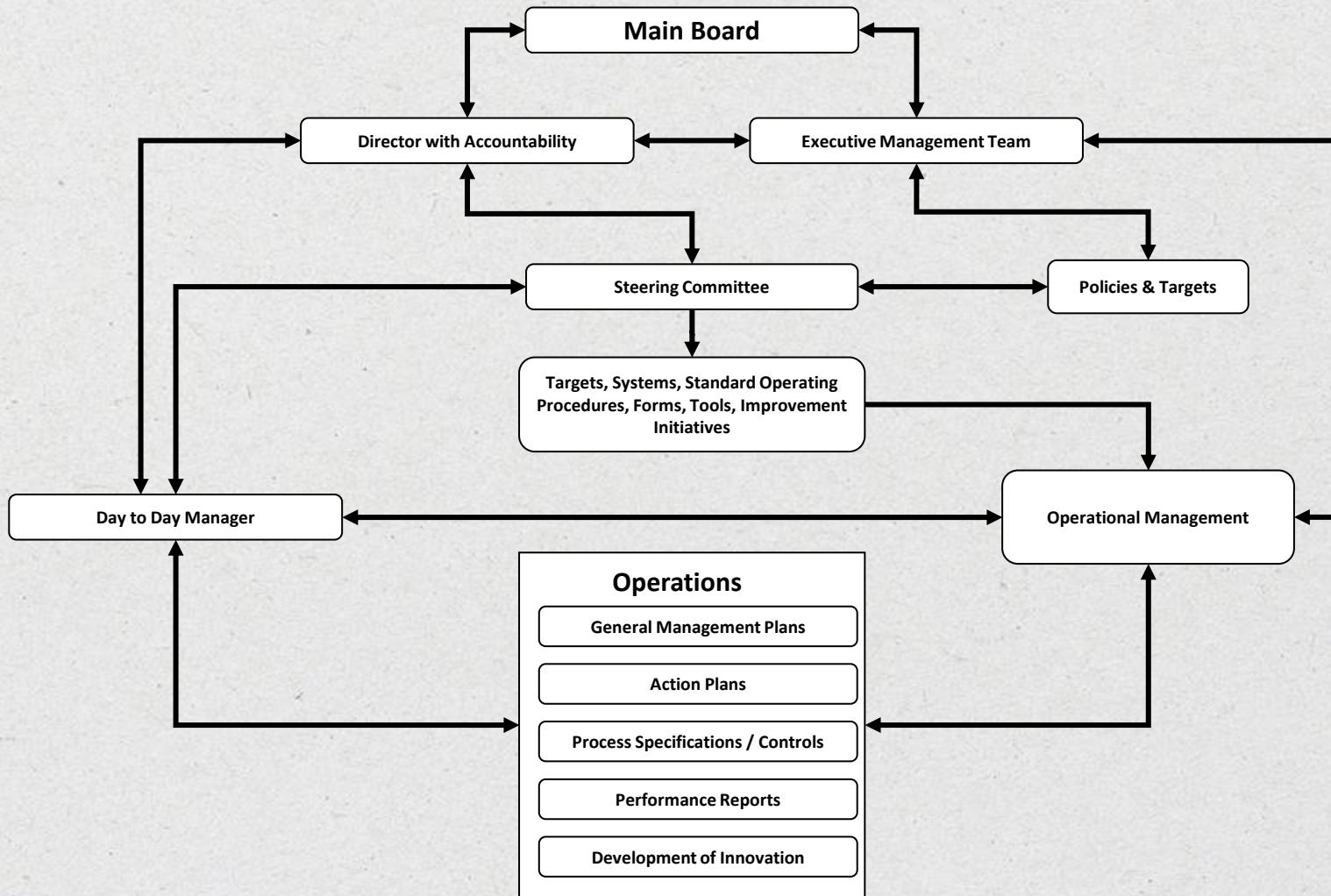
What it looks like at ground level

- A regularly-reviewed energy policy that is integrated into the corporate strategy.
- Energy efficiency opportunities and the risks and returns properly recognised within the normal financial decision-making process.
- Energy issues built into all corporate systems such as strategy, process management, marketing, procurement, HR appraisal, staff recognition and engineering.
- Energy issues built into the corporate structure with clear accountabilities in personal goals and appraisals.
- All staff aware of the importance of energy and empowered to bring opportunities and issues up in the continual improvement system.
- Energy information gathered at a level of detail in alignment with the materiality of costs to the organisation.
- Energy performance used as part of the organisation's marketing collateral, converted into carbon quantities where necessary.

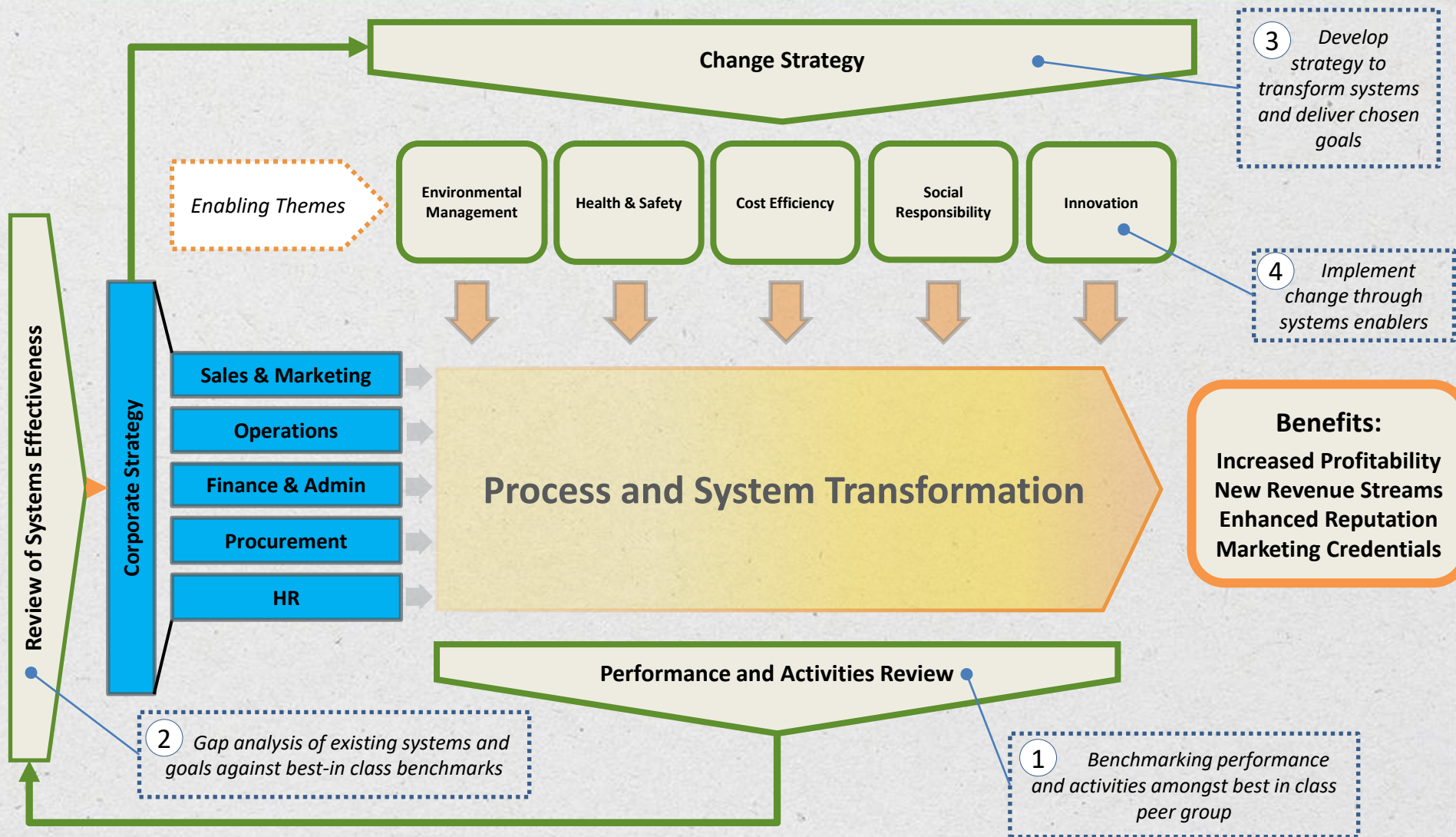
Why is senior level commitment important?

- Efficiency improvement requires senior level control and oversight so as to properly govern the process.
- This ensures that improvement measures do not risk the integrity of the manufacturing process, and that “Fear factors” do not kill off options that have low risks.
- The same approach, systems, skills and often materials can be used to drive savings in multiple categories, including energy, water, packaging, waste etc.

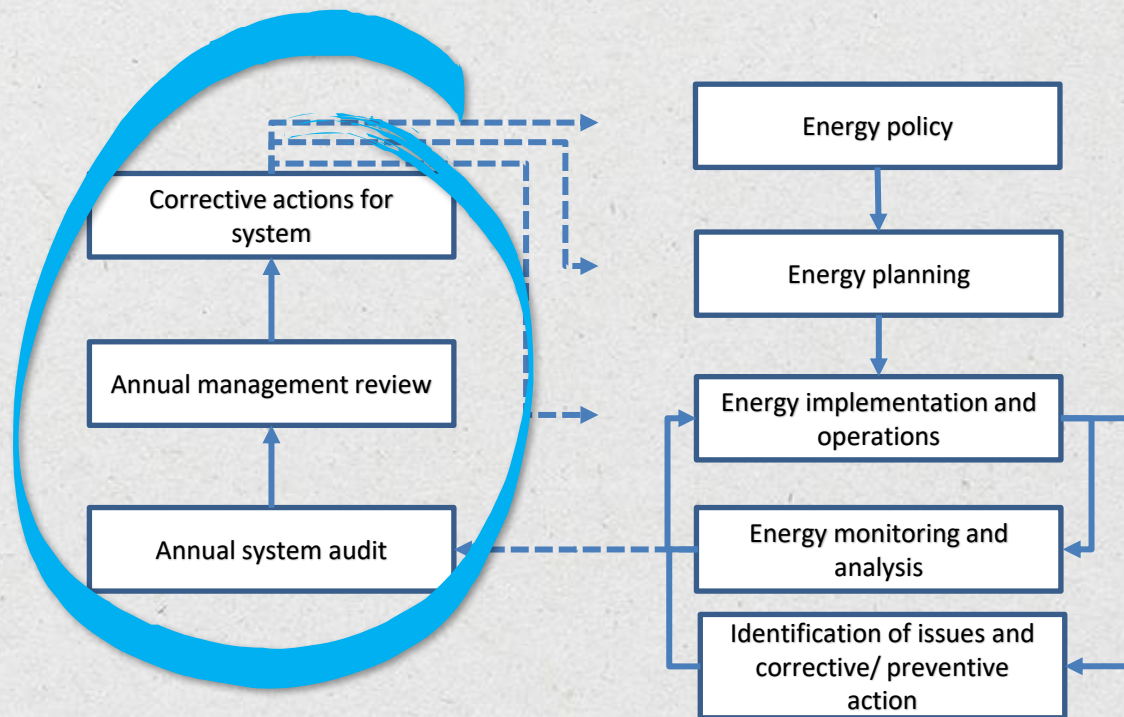
A robust governance framework is needed



A rigorous 4 step kick-start to the improvement cycle



Aligning a practical EnMS with ISO50001



ADDC ISO50001 EnMS templates recently rationalised

Recent revisions to ADDC's EnMS templates

- Energy benchmarking and best practice review contains:
 - Sections extracted from the current survey.
- Energy survey contains:
 - Only survey-related information – simplified scope and structure.
 - Further details on measures examined, rejected and prioritized.
 - More information on process optimization.
- Energy management plan contains:
 - Only information on project planning - simplified scope and structure.
- Verification of implementation of last year's plan:
 - Table clarifying what was implemented, carried over or abandoned.
- Annual energy review will contain:
 - Performance sections moved from the previous survey and plan templates.
 - More formal structures to compare the energy baseline against current and planned performance.
 - New review elements on systems and systems performance.
- Additional elements inserted across all documents.

System templates from our programme

| | Item | New Joiners | Reapplicants |
|----|--|-------------|--------------|
| 1 | Supply Details Form | Yes | Yes |
| 2 | Single Line Diagram(s) | Yes | Yes |
| 3 | Direct Debit Evidence | Yes | Yes |
| 4 | Energy Management Checklist | Yes | Yes |
| 5 | 5 Year Energy Forecast | Yes | Yes |
| 6 | Nominate Senior Executive Responsible for energy | Yes | Yes |
| 7 | Nominate Energy Manager | Yes | Yes |
| 8 | Policy for Energy Management | Yes | Yes |
| 9 | Executive Team/ Main Board Energy Reporting | 1 example | 12 examples |
| 10 | Site Energy Survey Report | Yes | Yes |
| 11 | Benchmarking and Best Practice Review | Yes | Yes |
| 12 | Energy Performance and Continuous Improvement Review | N/A | Yes |
| 13 | Verification of Implementation of Last Year's Plan | N/A | Yes |
| 11 | Energy Management Plan and Targets | Yes | Yes |
| 12 | ISO 50001 or ISO 14001 Certificate | Yes | Yes |

Just the basics of what can be achieved:

- Quote from a UK company director¹ at an energy management event:
 - “We spend a fortune every year on giving staff generous bonuses for uncovering and delivering energy saving opportunities. It’s the best investment we make”.
- Quote from an operations manager at a plastics company:
 - “One of our staff members had a crazy idea for making savings. He kept going on and on about it until we gave him some time and money just to shut him up. He proved that it worked and saved \$22,000 a year”
- Director of a UK company with a US owner, in 2001¹:
 - “We make a consumer product that should really be made in the far east. Our parent repeatedly examined the option of relocating our production, but every time they find that they cannot improve on our manufacturing costs. We continually invest in tests and research projects to improve our efficiency, so despite our high cost base we are safe. No other location can catch up”
 - In 2023 that firm is still located in Tamworth, UK.

1: Conversation with J. Churchman-Davies.

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