

# The More the Merrier

## *Leveraging Diverse Players to Deploy Energy Management Systems in Industry*

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# Outline

1. Energy management systems (EnMS)
2. Government energy management programmes
3. Role of industry, energy service providers and financial institutions
4. Opportunities for progress

# Achieving Energy Efficiency with energy management

## What is an Energy Management System (EnMS)?

- A suite of procedures and practices to ensure systematic tracking, analysis and planning of energy use in industry

## What does an EnMS System Do?

- Maximises energy savings and improves energy performance continuously through organisation and technology changes at the facility and enterprise level
- Helps companies overcome informational, behavioural and organisational barriers to energy efficiency

**EnMS standards:**  
defined by  
standardisation bodies  
(e.g., ISO 50001)

**EnMS specifications:**  
formulated by a  
government agency

## Energy Management System – Some results

- Industries that adopt EnMS may **save up to 10-30%** of their total energy use.
- Companies including Dow Chemical, United Technologies Corporation, 3M, St Marys Cement and Toyota have achieved major energy-intensity improvement using EnMS.

### 3M Brockville Plant, Canada

- Began ISO 50001 implementation in 2011 within GSEP pilot
- Improved energy intensity by 15.2% over three years
- Reduced energy use from compressed air system by 12%
- Reduced energy costs by 30% per unit of product (\$/m<sup>2</sup> )

# Strategies to Enable Large Scale Adoption of Energy Management

- Implementation of energy efficiency measures can be slow to materialise and industries often need to be supported by programmes or incentives to fully realise energy efficiency potential.

## Two Key Strategies to Mobilise Adoption

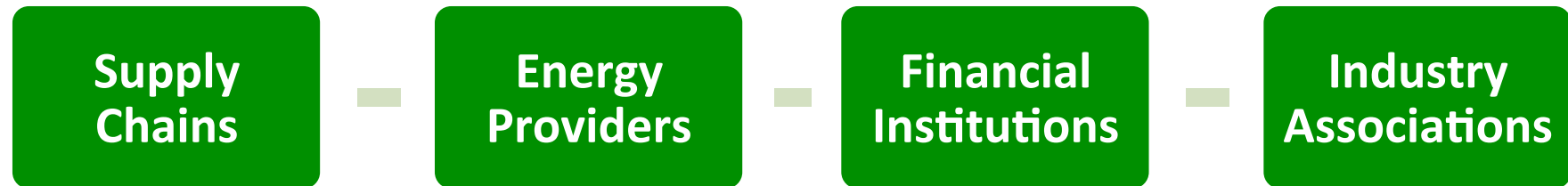
1. **GOVERNMENT-LED ENERGY MANAGEMENT PROGRAMMES (EnMPs)**  
which mandate or encourage companies to implement EnMS and invest in identified energy savings
2. **THIRD PARTY INITIATIVES**  
which drive the uptake of EnMS in industry and stimulate industry decision makers to take action

## Examples of Government Programmes that Promote EnMS

| Country            | Program Name   | EnMS type                | Voluntary<br>Mandatory | Certification | Drivers                              |
|--------------------|--|--------------------------|------------------------|---------------|--------------------------------------|
| <b>Australia</b>   | Energy Efficiency Opportunities                        | EEO Assessment Framework | M                      | No            | Public reporting of EE opportunities |
| <b>China</b>       | Top 10,000 Enterprise Program                          | GB 23331                 | M                      | Voluntary     | Mandatory                            |
| <b>Denmark</b>     | Agreement on Industrial Energy Efficiency (DAIEE)      | ISO 50001                | V                      | Yes           | Tax rebate                           |
| <b>Ireland</b>     | Energy Agreements Program                              | ISO 50001                | V                      | Yes           | Extensive technical support          |
| <b>South Korea</b> | GHG and Energy Target Management scheme                | ISO 50001                | M                      | Yes           | Mandatory                            |
| <b>Sweden</b>      | Energy Efficiency in Energy Intensive Industries (PFE) | ISO 50001                | V                      | Yes           | Tax rebate                           |
| <b>USA</b>         | Superior Energy Performance                            | ISO 50001                | V                      | Voluntary     | Awards, possible tax rebate          |

## Alternate & complementary channels to deliver corporate adoption of EnMS

Third Parties can also drive the uptake of EnMS in industry



Energy providers, multinational companies and multilateral and commercial banks around the world have started to initiate large-scale energy efficiency programmes that have EnMS at their heart.

# Energy Management Systems in Supply Chains

Supply Chain Initiatives (SCIs) by corporations focusing on EnMS have potential to continuously deliver cost savings and increase efficiencies across company value chains on a large-scale and across a broad business base.

ISO 50001 is useful for companies seeking an internationally recognised tool in corporate and supply chain sustainability programmes

## Examples

- SKF requires all its energy intensive suppliers have ISO 50001 by 2016.
- HP is requiring suppliers in China and Taiwan to implement EnMS.
- Governments (Japan, Netherlands) allow larger companies to count action in the supply chain toward their energy targets/obligations.
- Financial institutions, like IFC, now offer specialised financial services for energy efficiency projects in suppliers of large brands.



## EnMS in Energy Efficiency Obligations (EEO) - Utility Programmes

Traditionally focused on residential sector and technical options: now targeting industry and more sophisticated programmes

- From... technical assistance and financial incentives for technology/capital retrofit
- ... To comprehensive programmes with training and support on specific energy management approaches
- Incentives for O&M improvements and EnMS adoption, energy management training, and energy manager/energy staffing programs.
- Training “cohorts” or companies

### Example: Energy Trust of Oregon (ETO)

- A non-profit corporation, ETO facilitates EnMS implementation by utility customers. ETO offers technical support and incentives for customised project solutions and technologies.
- Services and projects paid principally through systems-benefit charges.

## EnMS and Financial Institutions

Financial institutions are initiating models that blend financing with technical assistance and EnMS capacity building.

### Example: GEF-funded Program: EE Market Transformation in Russia

- EBRD + UNIDO joint program (2010-15) to build capacity of the government to develop effective IEE policies, and of industry to engage in energy management and identify energy efficiency projects.
- UNIDO: support SMEs + policy support
- EBRD: support large companies
  - ✓ Provides technical assistance and capacity building to industry CFOs to develop bankable EE projects according to EnMS.
  - ✓ Builds capacity of local lenders (incl. financial intermediaries, ESCOs, to access risks and returns of EE projects.

# EnMS and Industry Associations

## Example: Food Processing industry – Pacific North West

Cluster enterprises to accelerate adoption of EnMS

- Partnership with Northwest Food Processors Association (NWFPFA) to leverage enterprise participation

25% energy intensity reduction - voluntary target for sector

- Network of companies to share best practices – role of industry associations
- Benchmarks

5 basic elements of the successful program:

1. Third party to help implement EnMS in companies and provide training
2. Industry association: the intermediary between companies and government
3. Energy audits to identify energy savings potential
4. Data collection and MRV methodology to assess energy savings
5. Incentive policy for technology retrofits; awards (ex. industry collaborators)

# Enhancing Public-Private Collaboration

Governments play an important role in establishing support structures to promote uptake of EnMS:

- need to be tailored to third party as well as industry needs.
- consultation with industry and third parties is key

## Opportunities for progress: collaboration

- Establish a framework to encourage third parties to encourage EnMS adoption
- Define/validate the GHG and energy saving MRV methodologies
- Develop EnMS implementation guidelines and Technology catalogues
- Unleash financing for energy efficiency projects
  - Providing best practices to commercial banks on mainstreaming EE finance
  - Public-private energy saving risk-sharing facility for suppliers / SMEs
  - Utility EE models with systems benefit charge
- Train and build capacity of third parties
- Demonstrate benefits – peer-to-peer facilitation and case studies

Thank you!

