# *The More You Use...*
## *The More You Save...*
### *If You Got EnMS*

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**Managing Director**
**TransReg LLC**

# First, Who We Are and What We Stand For...

- **The Beginning and The Earlier Years**
  *1997 :  Transnational Regulatory Group was founded*

- **Sustained Performance**
  *2009 :  Sustain...  Surpass! ™*

- **It's *MEGA* Time!**
  *2015 and Beyond :  Excel Toward Sustainability ™*

- **Our Core Values**
  - *First Do No Harm*
  - *Next Do Only Lasting Good*
  - *Finally Do with Vigor and Innovation*

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*Transduce Your Impacts... Transmute Your Business.®*

# What Are We Talking About Today... Energy?

- ⊙ *Something Old;*

- ⊙ *Something New;*

- ⊙ *Something Borrowed;*

- ⊙ *and Something Transmute!*

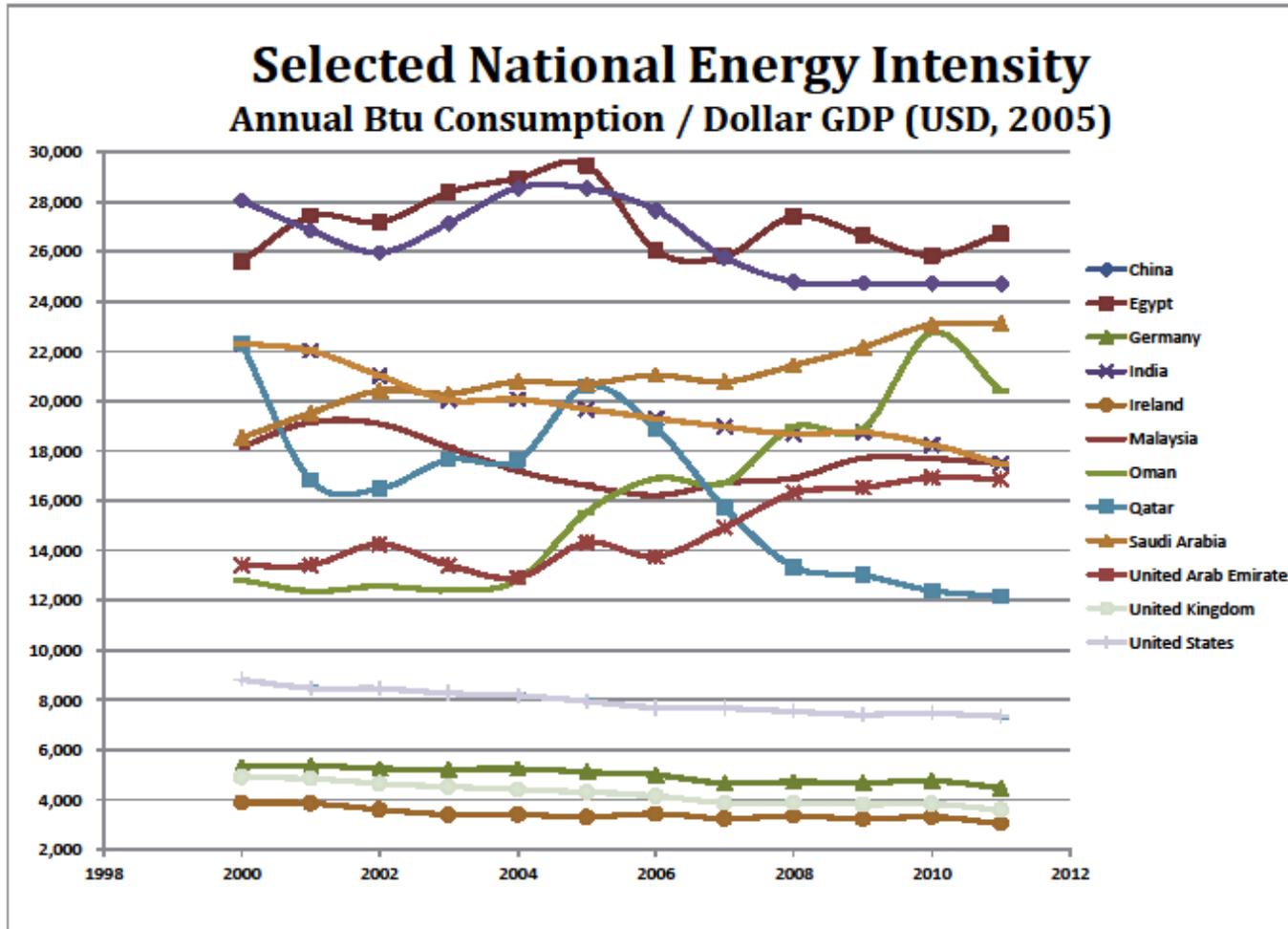# ... And Why Should You Care ?

## Energy Management...

*It's not just about what your customers think of your company; but it's all about how YOU look at and deal with your business !*

# Energy Intensity - A Global View



*Source: US EIA Data, Retrieved and Compiled March 2016*

# Energy Savings or Concerns… A Tug-o-War?

- Rising and/or uncertainty in cost of energy

- Technological alternatives and suitability

- Local distributions and energy options

- Regional and global energy politics

- Business sustainability

# EnMS – A Centric Approach to Competitiveness

*"The purpose of this International Standard is to enable organizations to establish the systems and processes necessary to improve energy performance, including energy efficiency, use and consumption..."*

*Introduction, ISO 50001:2011*

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# ISO 50001/EnMS Framework and Language

- Advocating...    System approach

- Requiring...    Leadership and commitment

- Engaging...    Activities under organization controls

- Benefiting...    Organizations of all types and scopes

- Enabling...    Optimal energy performance

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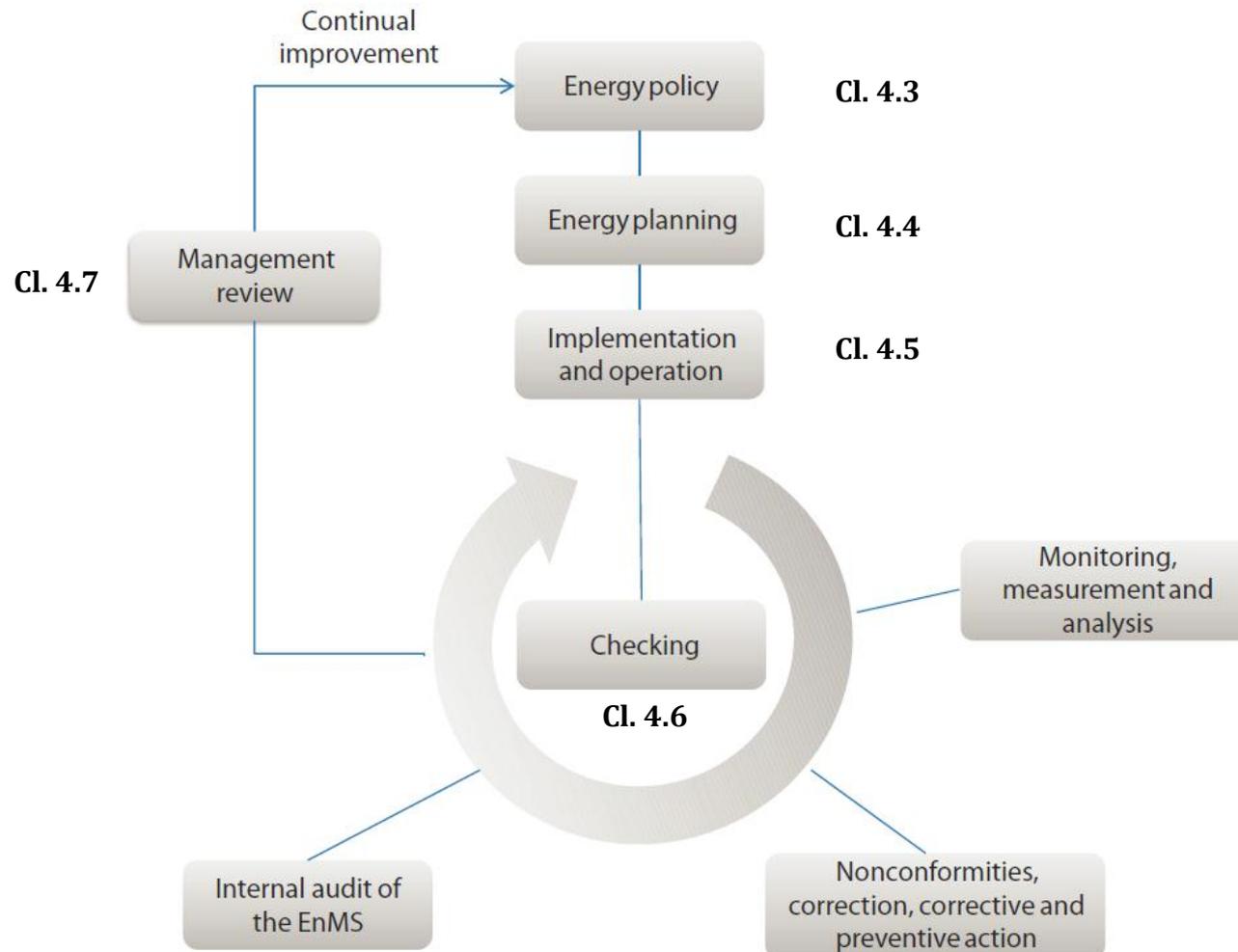*Transduce Your Impacts... Transmute Your Business.*®

# ISO 50001/EnMS Framework and Language

- ISO 50001 – Requirements

- ISO 50002 – Energy Audit

- ISO 50003 – EnMS Audit and Certification

- ISO 50004 – Guidance on Implementation

- ISO 50006 – Measuring Performance

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# EnMS Framework and Language



Ref. ISO 5001:2011, Fig, 1

# EnMS Framework and Language

- *energy management system (EnMS)* - set of interrelated or interacting elements to establish an energy policy and energy objectives, and processes and procedures to achieve those objectives

- *energy baseline* - quantitative reference(s) providing a basis for comparison of energy performance

- *energy consumption* - quantity of energy applied

- *energy efficiency* - ratio or other quantitative relationship between an output of performance, service, goods or energy, and an input of energy

- *energy use* - manner or kind of application of energy

- *energy performance* - measurable results related to energy efficiency, energy use and energy consumption

- *energy performance indicator (EnPI)* - quantitative value or measure of energy performance, as defined by the organization

# EnMS in Action… *Pillar Considerations*

- Energy review                    Clause 4.4.3

- Energy baseline                 Clause 4.4.4

- Energy performance indicators     Clause 4.4.5

- Objective, target, action plan       Clause 4.4.6

- Monitoring, measurement and analysis Clause 4.6.1

# EnMS in Action... *Key Follow-Through*

- Inventory – energy source, use and consumption

- Measurement – past and present

- Baseline – demonstration and justification

- EnPI – net gain/loss and improvement

- Review – change management

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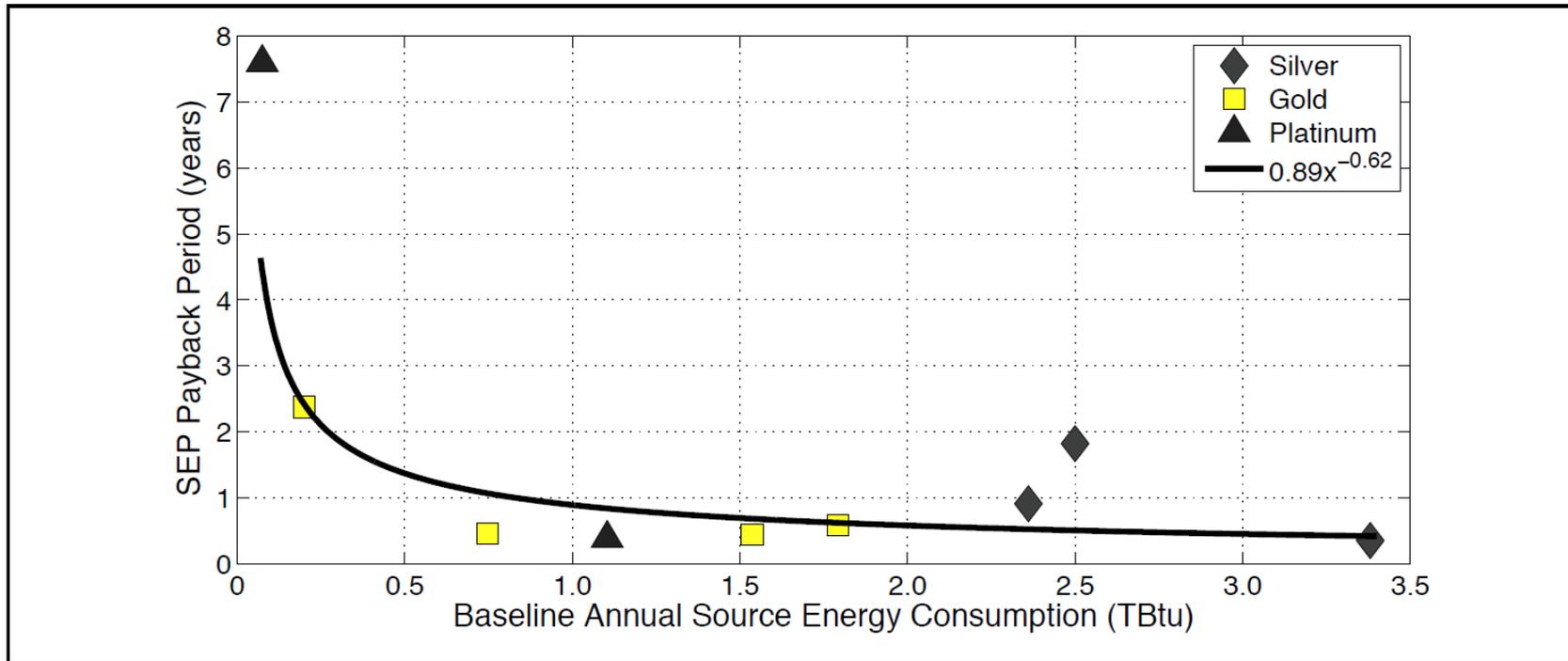
# New Revision and EnMS Integration

- Management System Standard and High Level Structure - The Advent of ISO 50001:2016...

- Integrated Business Management

# The Real Bottom Line – EnMS on Payback



Source: LBNL-6349E, Therkelsen, Sabouni, McKane, and Scheihing, 2013

# Essence of EnMS…

- Conformity?

  - Customer?

    - Certification?

- Continuing Performance Improvement !

# Take Action... From Start to Sustainability

- Start from the end... *current performance status quo*

- Construct the (business) case... *holistic but realistic*

- Return to the top... *management buy-in a must*

- Leverage competency... *collaborate-integrate*

- Share outcomes and visibility...  Sustaining success

# ISO 50001 Certification Process and Frequently Asked Questions

Presented By:
Karen Bakker, Product Manager – ISO 50001

# SGS

## ABOUT SGS

**Nº1**
**WORLD**
**LEADER**

**80,000**
**EMPLOYEES**

**1,650**
**OFFICES AND**
**LABORATORIE**
**S**

**14**
**GLOBAL**
**INDUSTRIES**

**GLOBAL**
**SERVICE**
**LOCAL**
**EXPERTISE**

**SERVING 130**
**COUNTRIES**

# GLOBAL REACH AND LOCAL SUPPORT

**SGS**

**AMERICAS**
**400** Offices & Laboratories
**17 250** Employees

**EUROPE/ AFRICA/MIDDLE EAST**
**825** Offices & Laboratories
**31 500** Employees

**ASIA PACIFIC**
**425** Offices &Laboratories
**31 250** Employees

- **80,000 employees worldwide**

- **Over 1 650 offices and laboratories operating in 130 countries**

# CERTIFICATION AND BUSINESS ENHANCEMENT (CBE)
## CERTIFICATIONS

**GENERIC STANDARDS**

- ISO 9001 (Quality Management Systems)
- ISO 14001 (Environmental Management Systems)
- OHSAS 18001 (Occupational Health & Safety)
- ISO 50001 (Energy Management Systems)
- ISO 14064 (Green House Gas Verification)
- ISO 27001 (Information Security Management Systems)
- ISO 22301 (Business Continuity Management)
- ISO 20000 (Information Technology Management)
- SA 8000 (Social Accountability)
- PAS 2050 (Carbon Footprint)
- ISO 10002 (Complaint Management)
- Integrated Management Systems (IMS)

**INDUSTRY STANDARDS**

- **Oil & Gas** – ISO 29000
- **Automotive** – ISO/TS 16949
- **Aerospace** – AS 9100, EN 9100, AS 9110
- **Medical Device** – ISO 13485, CE Directives, Local Regulatory
- **Food Safety** - ISO 22000, FSSC 22000, HACCP, GMP
- **Pharmaceutical** – GMP Audit Solutions
- **Cosmetics** – ISO 22716
- **Bio-fuels** – Bonsucro, ISSC, RSPO, RTS
- **Forests & Wood** – Chain of Custody
- **Logistics & Transportation** – TAPA FSR, TAPA TSR, ISO 28000, C-TPAT
- **Electronics** – IECQ HSPM, ESD, EUP, EICC, RIOS, RS2
- **Telecommunications** – TL 9000
- **Railway** – IRIS
- **Finance** – ISO 22222

# SGS : THE LARGEST ACCREDITED CERTIFICATION BODY

## Europe / Africa / Middle East

**41 Accreditations in 41 Countries**

Spain — ENAC

Italy — ACCREDIA

Switzerland — SWISS CERTIFICATION

Germany — DAkkS

France — cofrac

UK — UKAS MANAGEMENT SYSTEMS

Belgium — BELAC

Finland — FINAS

Hungary — NAT

Slovakia — SNAS

Portugal — IPAC acreditação

Croatia — HAA

Holland — RvA

Bulgaria — ИА "БСА"

Egypt — EGAC

South Africa — SANAS

Turkey — TÜRKAK

Dubai — DAC

Japan — JAB

Uzbekistan — AT

Pakistan — PNAC

## Asia Pacific

India — NABCB

China — CNAS (CNA S C033-Q)

Singapore — Singapore Accreditation Council

Thailand

Philippines — PAB

Indonesia — KAN

## North and Latin Americas

USA — ANAB

Argentina — OAA

Brazil — INMETRO

Mexico — ema

Colombia — ONAC

Chile — INN-CHILE SISTEMA NACIONAL DE ACREDITACION

Uruguay — ORGANISMO URUGUAYO DE ACREDITACION

Ecuador — oae

Peru

Hong Kong — HKAS

Korea — KAB

Malaysia — STANDARDS MALAYSIA

Taiwan — TAF

Australia — JAS-ANZ

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## Implementation
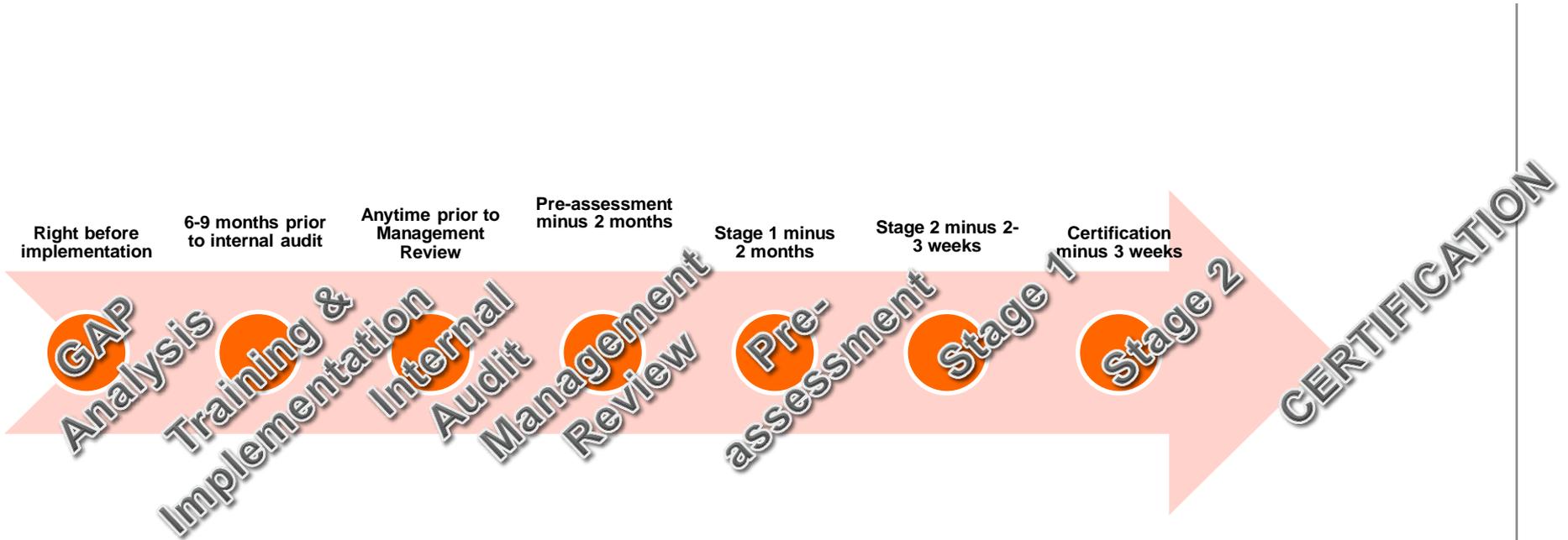
- Gap Analysis

- Implementation

- Internal Audit & Corrective Action

- Management Review

## Registration

- Pre-Assessment (Typically 2-3 months prior)

- Stage 1 Audit (Readiness Assessment – Typically 3-4 weeks prior to Stage 2)

- Stage 2 Audit (Certification Audit)

- Surveillance Audits (Annual / Semi-Annual)

# IMPLEMENTATION & REGISTRATION
## AT A GLANCE



Right before implementation — **GAP Analysis**

6-9 months prior to internal audit — **Training & Implementation**

Anytime prior to Management Review — **Internal Audit**

Pre-assessment minus 2 months — **Management Review**

Stage 1 minus 2 months — **Pre-assessment**

Stage 2 minus 2-3 weeks — **Stage 1**

Certification minus 3 weeks — **Stage 2**

**CERTIFICATION**

■ Summary of a Pre-Assessment



▪ The objective of the Pre-Assessment audit is to <u>assess</u> the state of your MS: (1) how your organization aligns with the requirements of the Standard; (2) that your MS conforms with the Standard; (3) any areas of your MS that require addressing prior to a Certification Audit.



Elements of a Pre-Assessment are:

- We perform a mock audit of both Stage 1 and Stage 2
- We provide a detailed report outlining findings
- Next step - Plan and Review

▪ Types of findings – Critical and Non-Critical Findings and Opportunities for Improvement

## Summary of a Stage 1 Audit



- The objective of the Stage 1 audit is to review your MS documentation and to confirm: (1) the management system conforms with the applicable elements of the Standard; (2) to assess your readiness for the Stage 2 Certification audit.



- Elements of a Stage 1 Audit are:
  - We review all MS documentation and KPI's
  - We review Scope/Boundary & Regulatory requirements
  - Review availability of Planning and Implementation information
  - Review of Internal Audits and Management Reviews
  - Next step Plan and Review & Stage 2 Readiness

- Types of findings – Critical and Non-Critical Findings and Opportunities for Improvement

■ Summary of a Stage 2 Audit

▪ The objective of the Stage 2 Audit is to confirm the management system:  (1) conforms with the applicable elements of the Standard; (2) the organization conforms with its own policies and procedures; (3) the management system is suitable for the organization; and (4) that the management system is suitable and effective, and enables the client to achieve its own objectives.

▪ This is a full assessment of the implementation and effectiveness of the MS.  There is a wide sample of interviews, records review, facilities tour, observations, etc. to make this determination.

▪ Types of findings – Major or Minor Non-Conformances, Opportunities for Improvement, and Positives

■ Summary of a Surveillance Audit

- The objective of the on-going Surveillance Audits is to confirm the management system continues to conform with the applicable elements of the Standard; to confirm the organization continues to conform with its own policies and procedures; to confirm the management system is suitable for the organization; to confirm that the management system is suitable and effective, and enables the client to achieve its own objectives.

- This is a moderate assessment of the implementation and effectiveness of the MS.  Moderate sample of interviews, records review, facilities tour, observations, etc. are conducted.

- Types of findings – Major or Minor Non-Conformances, Opportunities for Improvement, and Positives

- **YES ---- Plenty of Common Clauses:**
  - Management Review
  - Internal Audits
  - Corrective / Preventive Actions
  - Documentation / Document Control / Records Control
  - Policy
  - With ISO 14001
    - Legal & Other Requirements / Evaluation of Compliance
    - Operational Controls
    - Training, Awareness, and Competence
    - Communications
  - With ISO 9001
    - Design
    - Purchasing / Procurement

- **More Alignment with the Next Evolution of the Standard**

- **<u>Focused Energy Planning</u>** ----
  - Rigorous Energy Review and Understanding of Energy Sources and Consumptions and Efficiencies
  - Formulated Methodology for Selecting Significant Energy Use
  - Understanding of Relevant Variables with respect to Energy Use
  - Formal Identification of Opportunities for Improvement
  - Establishment of Baseline and Energy Performance Indicators

- Performance Standard / Verification of Objectives/Targets
- More Focus on Monitoring, Measurement, and Analysis
- Definition of Energy Significant Deviation
- More Specific Focus on Operational Controls and

- **<u>Performance Standard</u>** ----
  - Demonstration of Continual Improvement through Energy Performance Indicators and Verification of Objectives and Targets
  - Strategic Long-Term Focus to have enough projects to meet O&Ts
  - Can Write Non-Conformances for not Achieving Performance

- **<u>Energy Planning & Monitoring/Measuring/Analyzing</u>** ----
  - Development and Upkeep of Energy Review
  - Establishment of Baseline and Energy Performance Indicators
  - Setting and Verifying Objectives and Targets (and having sufficient projects to meet overall targets)
  - Monitoring for Significant Deviations and taking action
  - Enhanced Monitoring, Measurement, and Calibration

# Thank you!

For more information, please contact:

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