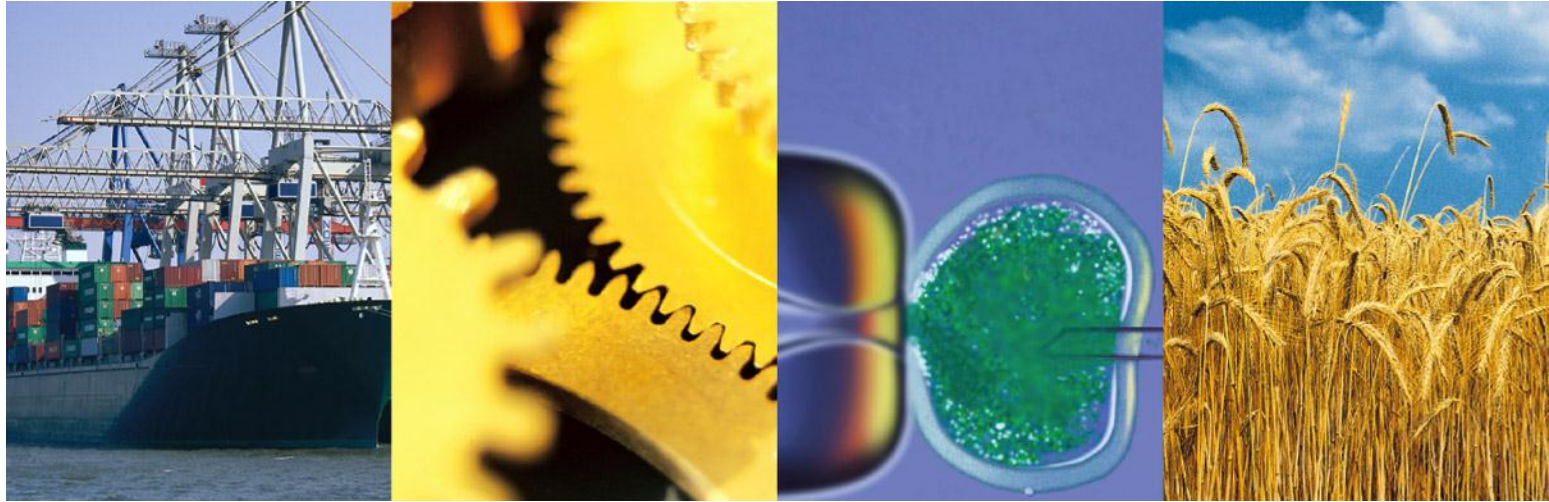


How ISO Standards Support Renewable Energy



IRENA Workshop

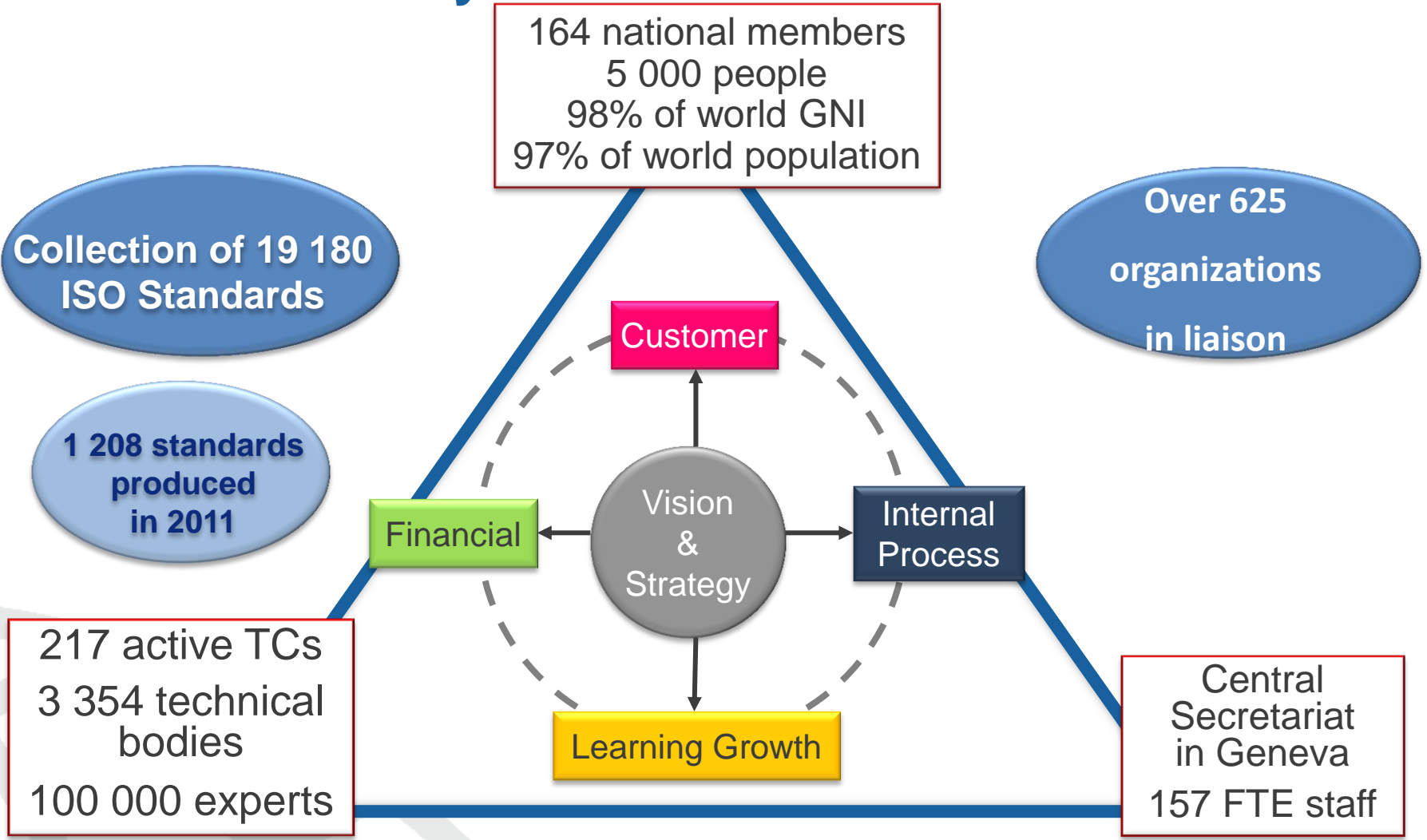
Federal Ministry for the Environment Bonn (Germany)

24 October 2012

Kevin McKinley


ISO Deputy Secretary-General

ISO – A Global System




ISO example of stakeholder engagement for ISO 26000 “Social Responsibility”

- WG directly under Board
- 436 participating experts, 195 observers from 99 countries
- 42 intl organizations in liaison
- Awareness and training for developing countries
 - 37 reg/intl workshops,
 - 10 national events
 - 3800 participants
- More than 26000 formal international comments addressed during development
- **Published 1 Nov 2010**



ISO and social responsibility



- ISO has launched the development of the future ISO 26000 standard providing voluntary guidance on social responsibility (SR).
- ISO 26000 will be for organizations of all types in both public and private sectors, in developed and developing countries.
- ISO 26000 will add value to existing SR work by:
 - developing an international consensus on what SR means and the SR issues that organizations need to address,
 - providing guidance on translating principles into effective actions, and
 - refining best practices that have already evolved and disseminating the information worldwide for the good of the international community.

Vast range of ISO subjects - responding to global needs ...

2008

- Industrial furnaces & equipment
- Network services billing
- Road traffic safety mgt systems
- Product recall
- Consumer product safety
- Cross border trade of second-hand goods
- Anti-counterfeiting tools
- Energy management

2009

- Fraud countermeasures and controls
- Traditional Chinese medicine
- Sustainability in event mgt
- Energy efficiency & renewable sources terminology
- Sustainability criteria for bioenergy

2010

- Asset management
- Natural gas fuelling stations
- Pigments, dyestuffs & extenders
- Safety amusement rides and devices
- Treated wastewater re-use for irrigation
- Biogas
- Energy savings

2011

- Project, programme & portfolio mgt
- Additive manufacturing
- Facilities management
- Outsourcing
- Risk management
- Bionics
- Fireworks
- Coal bed methane
- Carbon capture and storage

2012

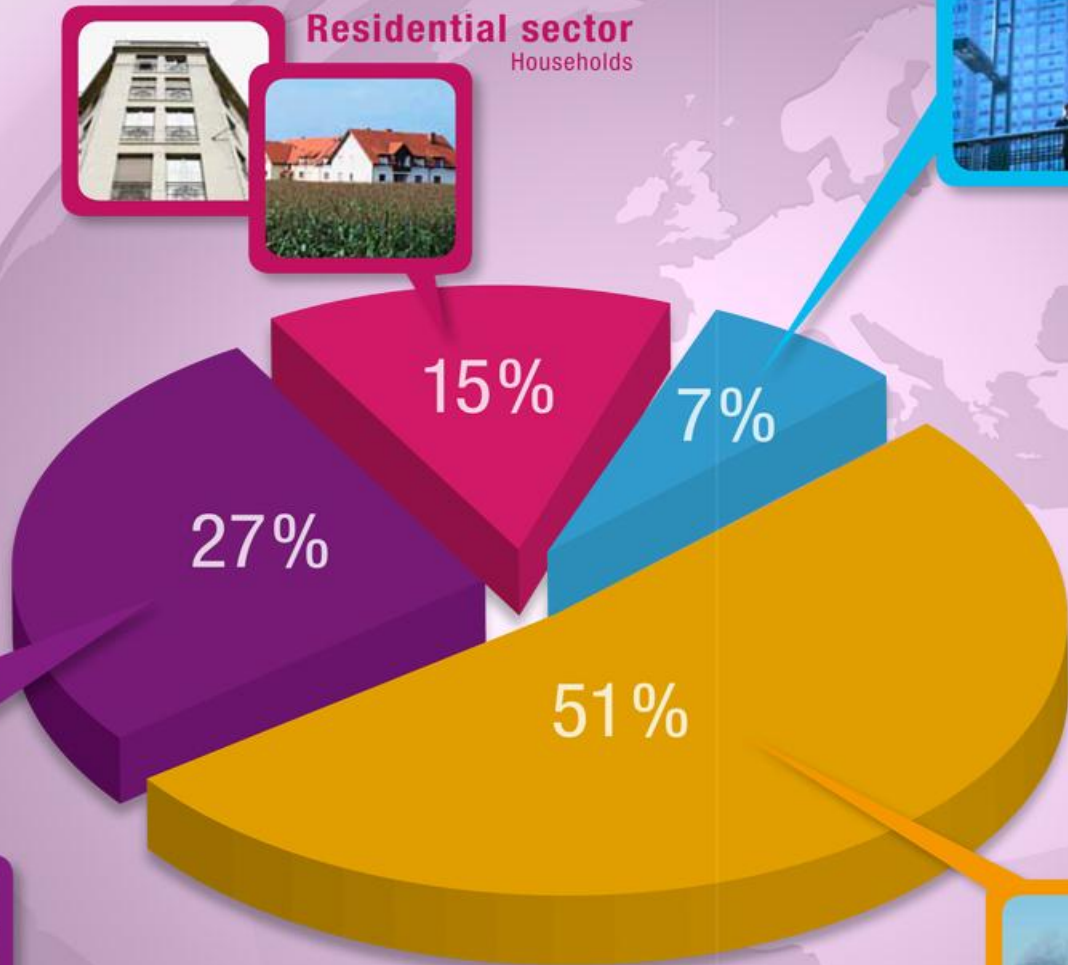
- Railway applications
- Sustainable development in communities
- Plastic and rubber machines
- Compliance programs
- Forensic sciences

Environment
Economic
Societal



World energy use

Total world consumption of marketed energy is projected to increase by 49% from 2007 to 2035.



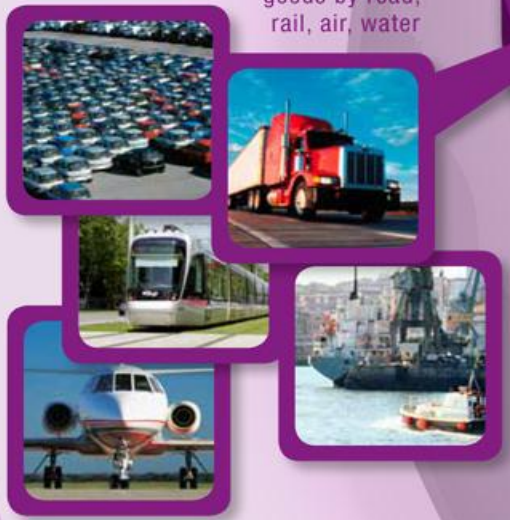
Commercial sector
Service providers
– businesses
and institutions



Residential sector
Households



Transportation sector
Moving people and goods by road, rail, air, water



Industrial sector
Manufacturing, agriculture, mining, and construction – and for a wide range of activities, such as processing and assembly, lighting



Energy - the value added by International Standards



- Promote good energy management practices
- Support scientific cooperation and possible harmonization of public policies
- Help improve consumers and users understanding and confidence
- Avoid unnecessary technical barriers to trade related to energy policies
- Enable the creation of world markets for energy technologies

Energy - the value added by International Standards (cont)

- Performance definitions, measurement and test methods
- Codification of best practices and management systems
- Design of checklists and guides
- Interoperability
- State-of-the-art knowledge formalized by recognized experts through double level of consensus, amongst stakeholders and across countries

The image shows a screenshot of a software interface. The top part is a search results page for 'Knovel Steam Tables'. It includes a description: 'This title provides a full implementation of the 1997 industrial steam by the International Association for the Properties of Water and Steam... accompanied by a calculator, live graphs, and a power cycle efficiency calculator.' Below the description is a 'Table of Contents' with items like 'Front Matter', 'Introduction', 'Power Cycle Efficiency Calculator', and 'Tables and Associated Calculators'. A 'Calculator' button is highlighted with a red circle.

To the right of the search results is a diagram titled 'AIR LEAKAGE IN A HOUSE'. It shows a cross-section of a house with various air leakage points labeled: 'Attic Hatch', 'Fan', 'Windows', 'Garage Door', 'Light Switch', 'Furnace Chimney', 'Furnace', 'Basement', 'Duct', 'Floor Drain', and 'Airtight Seal in Basement'. A note states: 'A large percentage of total house air infiltration occurs here.' A red circle highlights the 'Furnace' area.

Below the search results is a 'Performance Calculation' window. It has tabs for 'Calculate', 'Fluid Flow', 'Inlet System', and 'Outlet System'. The 'Calculate' tab is active, showing input fields for 'Delivery Pressure' (23 psia), 'Outlet Line Fric. Loss' (8.7311 feet), 'Total Equipment DP' (57.7 psi), 'Static Discharge Head' (22.52 feet), 'Discharge Pressure' (94.39 psia), and 'Required NPSH' (35 feet). The 'Energy Calculation' tab shows 'BHP' and 'Energy Cost/year' (163154.39 \$/year). The 'General Information' tab shows a schematic diagram of a pump system with labels for 'Delivery Pressure', 'Static Discharge Head', and 'Pump'.



Examples of ISO standardization supporting renewable energy

- ISO Technical Committees specifically involved: **Solar Energy, Hydrogen Technologies, Geothermal**
- Joint Working Group with IEC on **Wind Turbines**
- ISO/PC 248, ***Sustainability criteria for bioenergy*** preparing the future standard ISO 13065
- ISO/TC 255 ***Biogas***
- ISO/IEC JTC 2 Joint Project Committee – ***Energy efficiency and renewable energy sources – Common terminology***



TC 242 - Evolution of new energy standards



- After ISO 50001 was published ISO Project committee 242 was converted to ISO/TC 242 and the following WGs created:
- ISO/TC 242/WG 1 Energy Management
- ISO/TC 242/WG 2 Energy performance metrics
- ISO/TC 242/WG 3 Joint TC 242 - TC 257 WG: Measurement & verification of organizational energy performance - General principles and guidelines
- ISO/TC 242/WG 4 Opportunities for Improvement

TC 242 – New projects approved

- ISO/AWI 17570 Energy baseline general principles and guidance
- ISO/AWI 17578 Energy performance indicators (EnPIs) General principles and guidance
- ISO/AWI 17580 Monitoring, measurement, analysis and verification of organizational energy performance
- ISO/CD 50002 Energy audits
- ISO/AWI 50003 Energy management system audits and auditor competency
- ISO/AWI 50004 Guidance for the implementation, maintenance and improvement of an EnMS
- ISO/PWI 50005 Energy management systems – Modular implementation of the energy management system ISO 50001 including the use of energy performance evaluation techniques



Why government should assist national involvement in International Standards on energy management



- Promote good energy management practices
- Supporting scientific cooperation and possible harmonization of public policies
- Help improve consumers and users understanding and confidence
- Avoiding unnecessary technical barriers to trade related to energy policies
- Enable creation of world markets for energy efficient technologies

So what is the future Evolution of new energy standards

- 20 ISO Technical Committees involved in aspects of energy efficiency and renewables
- ISO Strategic advisory group (SAG) on Energy efficiency and renewable energy sources
- ISO/IEC JTC 2 Joint Project Committee – Energy efficiency and renewable energy sources – Common terminology
- Industrial energy efficiency (e.g. ISO/TCs 17, 86, 115, 117, 118, 203, 244)
- Increase of efficiency of road vehicles and tyres (ISO/TC 22, work with UNECE WP 29 and ITF)
- Energy efficiency of buildings (ISO/TC 163 and ISO/TC 205)
- ISO/TCs on solid, liquid and gaseous biofuels
- ISO/PC 248 *Sustainability criteria for bioenergy*
- Recent committees: ISO/TC 265 *Carbon capture and storage*, ISO/TC 263 *Coalbed methane*



**ISO Action Plan for
developing countries**

2011-2015



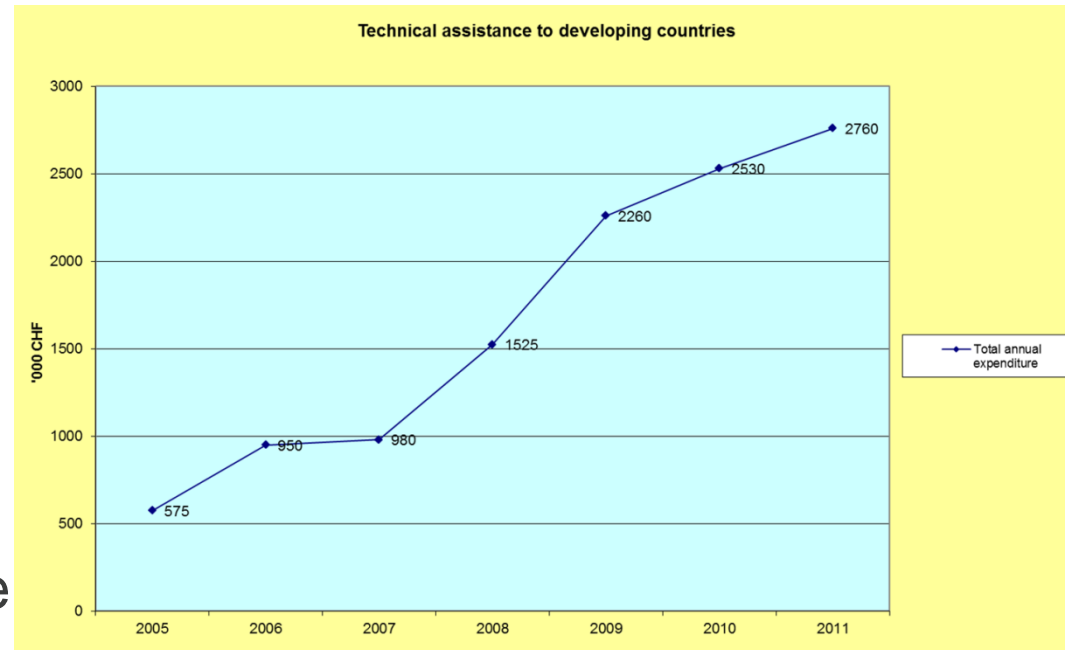
**Output 3:
Awareness improved on the role and
benefits of International Standards and
their use.
International Standards are therefore
increasingly used**

Building awareness on the importance of using standards in all spheres of economic activity to achieve sustainable development goals is a key element of national quality policies.

It is also useful in engaging stakeholders and the ultimate users of International Standards in national and international standardization work.

Results of ISO DC Action Plan 2005-2010

- Around 450 activities carried out covering all Action Plan objectives
- Around 17'000 staff and stakeholders from ISO developing country members participated
- Total of over 8.8 million CHF spent directly on the Action Plan from 2005 to 2010 (excluding ISO CS costs)



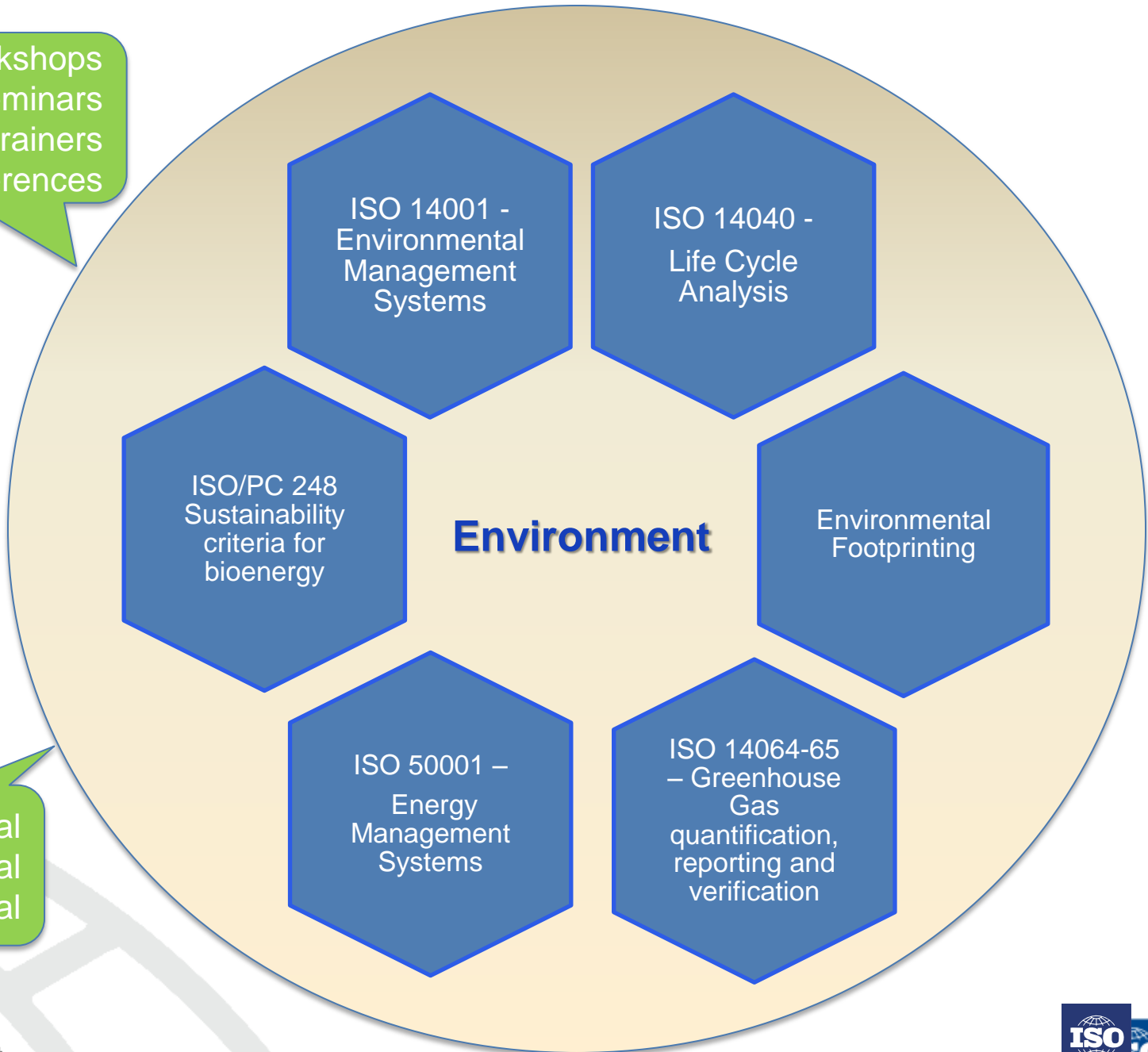
Funding of Action Plan 2011-2015

- For 2011, ISO Council has allocated 1.2 million CHF for developing countries and an additional 485'000 CHF for 2012
- The Swedish International Development Cooperation Agency (Sida), as main donor, will support the Action Plan through a 5-year project signed in March 2011 for 5.2 million CHF
- Sida is also financing a specific project for 8 Middle East and North African countries to encourage implementation of ISO 26000 on Social Responsibility for 2.4 million CHF
- DIN (Deutsches Institut fuer Normung), the ISO member from Germany, has pledged to provide an annual amount of 100'000 CHF
- SECO (Swiss State Secretariat for Economic Affairs) has signed an agreement for 440'000 CHF to support the Action Plan from 2011-2013
- Other ISO members contribute to the ISO Funds-in-Trust
- The German Federal Ministry for Economic Cooperation and Development (BMZ) has signed an agreement to support the Action Plan 2011-2015 for 800'000 CHF

Workshops
Seminars
Training-of-trainers
Conferences

Main areas of support

National
Regional
Global



ISO 50001 – Energy Management Systems

Objectives:

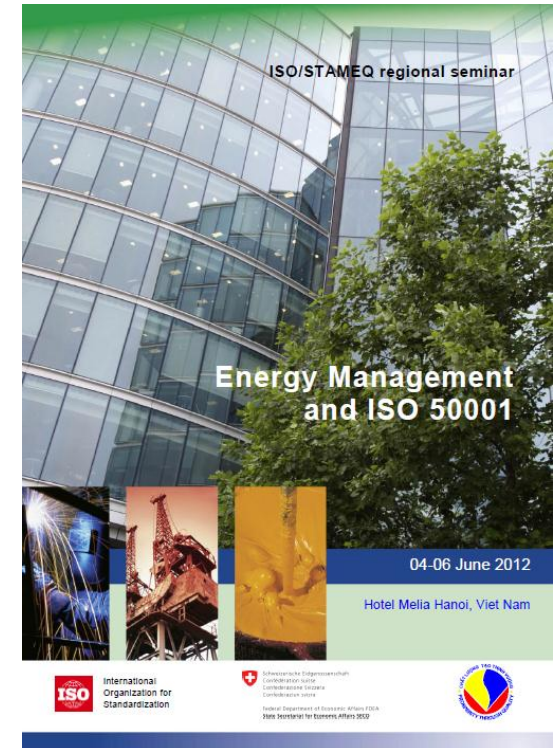
- To raise awareness on ISO 50001 in order to engage policymakers, standards authorities and prospective standard users and provide avenues for the development of national complementary policies to support the adoption of energy-efficient products and services. Some activities are carried out jointly with the United Nations Industrial Development Organization (UNIDO).

Outputs:

- National and regional workshops targeted at participants from standardization community, industry, government and academia.
- Regional Training of Trainers to create a pool of national trainers to disseminate knowledge about the importance of applying the standard
- Sponsorships to participate in ISO technical committee meetings

Regional events held:

- Oman, Thailand, Sri Lanka, South Africa, Senegal, Mauritius, Croatia, Viet Nam, Uruguay, Barbados and Tunisia.



ISO/PC 248
Sustainability
criteria for
bioenergy

Objectives:

- To discuss the social, economic and environmental aspects of the production, supply chain, and use of bioenergy, and identify criteria that could prevent it from being environmentally destructive or socially aggressive.

Outputs:

- Sponsorships to participate in ISO technical committee meetings

Sponsorships to TC Meetings held in:

- Frankfurt (2011)
- Chicago (2012)





Implications for ISO and IRENA

- Energy and renewables standardization is inefficient at the local or regional level where implications are global
- ISO's energy and renewables work is extensive - but gaps being identified and prioritized for potential new areas
- Essential to have clear international policy direction and needs
- Opportunity for IRENA to advise, guide and support the development of new ISO standards addressing global renewable energy challenges

Confidence has a nickname ...

