

ENERGY

Energy Efficiency Directive – Article 8

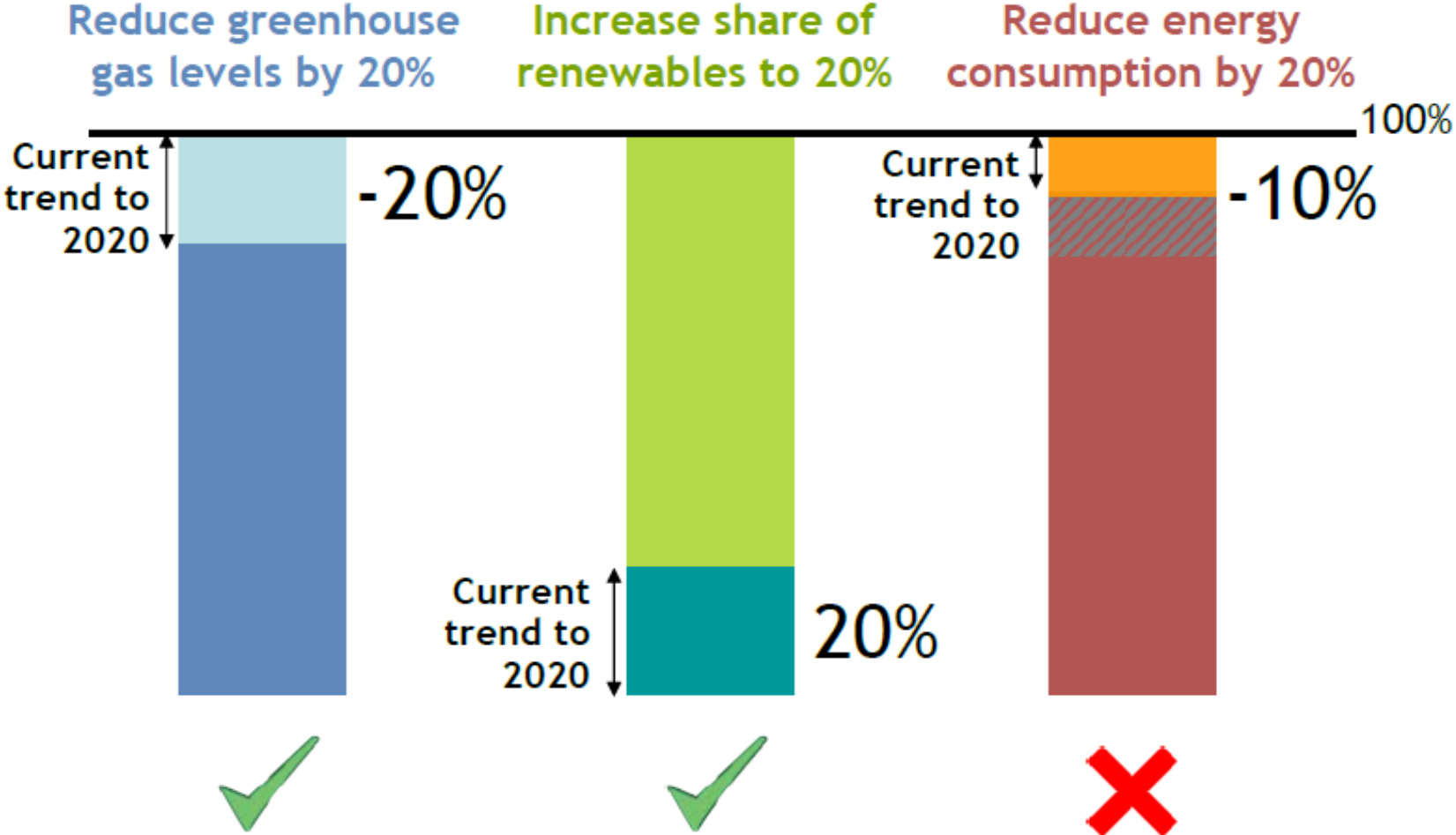
Standard Morgen: Energieeffektiviseringsdirektivet – 11 February 2016

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Introduction

- Since the 1970s, energy efficiency has contributed more to our economic prosperity than any other single source of energy supply. This is the power of a million small, and often invisible, actions
- Ambitious energy savings will be one of the prerequisites for a low-carbon economy in Europe
- The European Union recognises the importance of energy savings and has set a policy target of achieving 20% energy savings by 2020 and 27% by 2030, as compared to business as usual energy use
- The interpretation of the energy savings target in EU law is much weaker than for the other two pillars of the EU climate package: greenhouse gases (GHG) and renewable energy. As a result, evidence suggested that the energy savings target would be missed by a wide margin and new legislation was put in place in 2012 (The Energy Efficiency Directive)

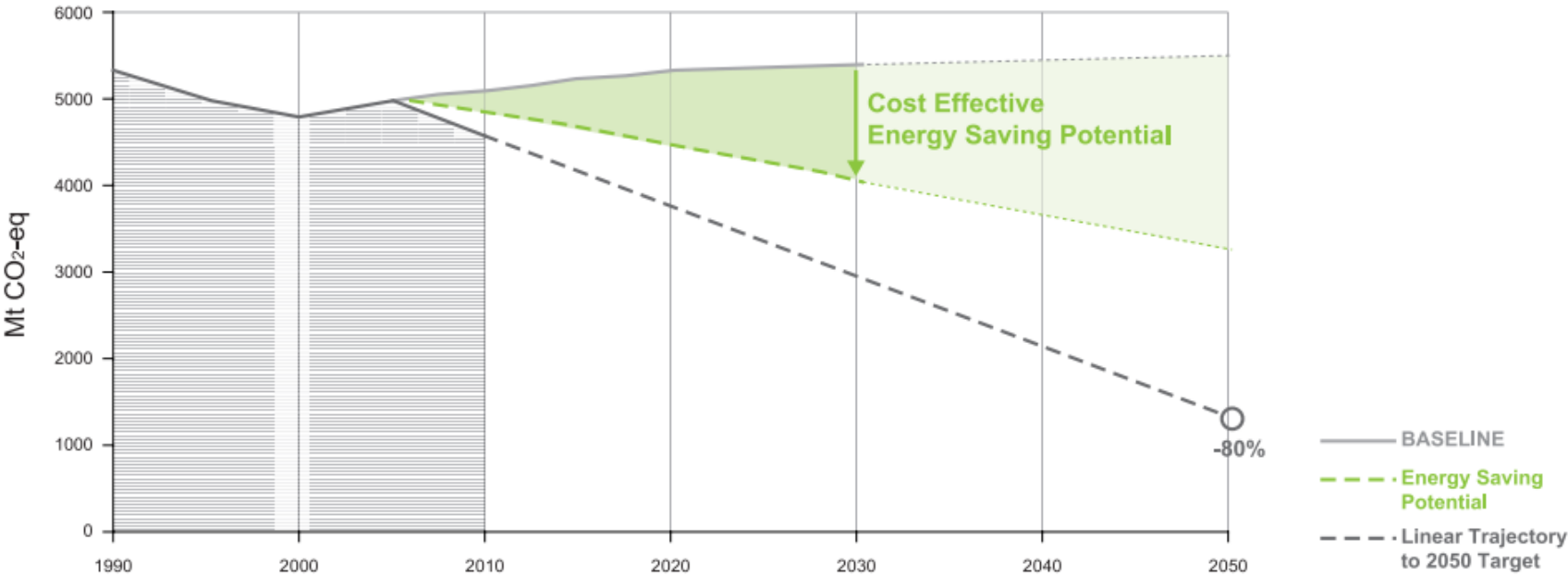
EU 20-20-20 Targets by 2020



Energy Efficiency and the low-carbon economy

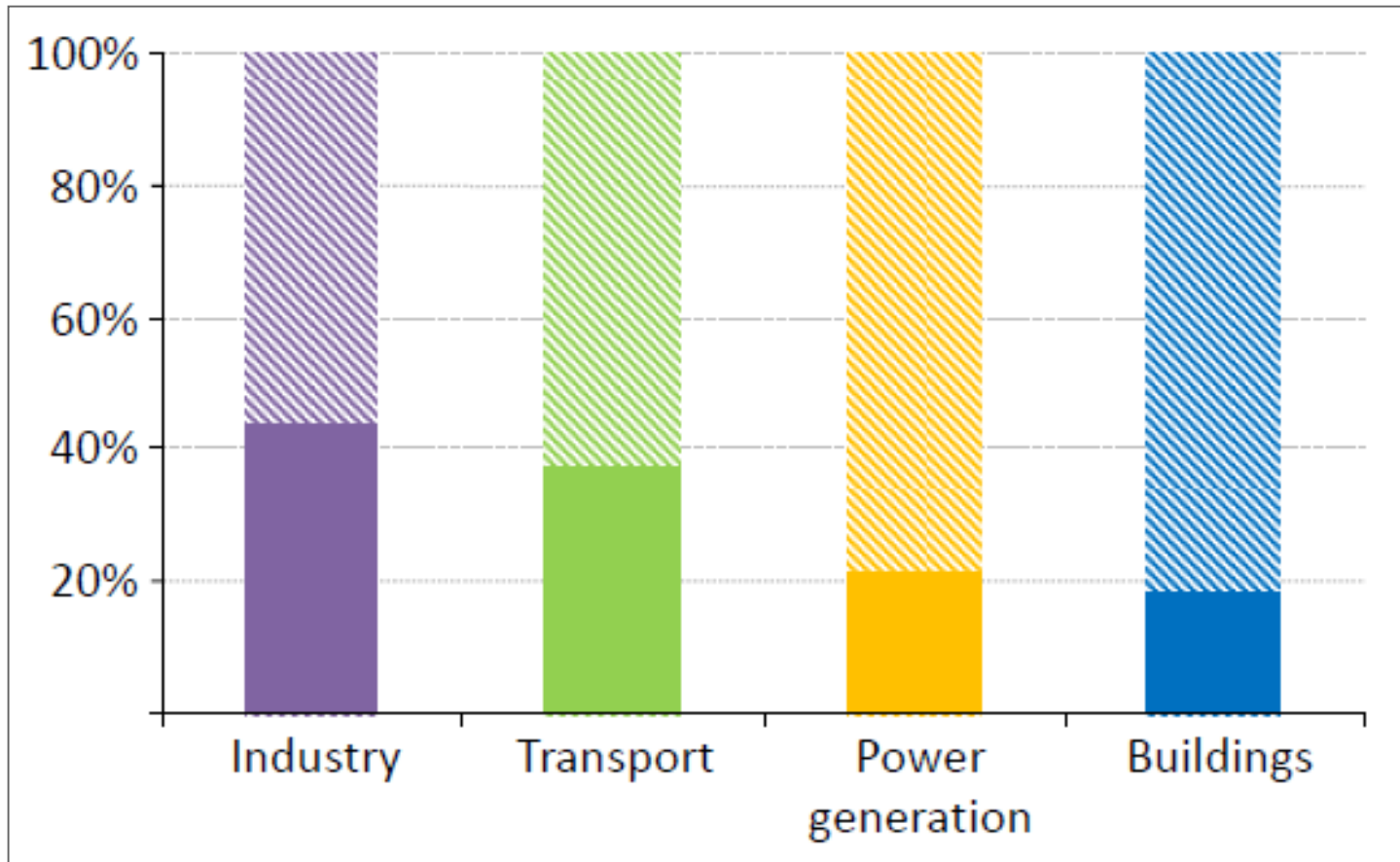
Energy Savings are Essential for the Decarbonisation of the European Economy

Energy savings have the potential to cover half of the EU's 80% emission reduction target for 2050
Achieving the EU's 20% energy savings target by 2020 is capturing that potential



Remaining Energy Efficiency potential in different sectors

- *"Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035" IEA, World Energy Outlook 2012*



DIRECTIVE 2012/27/EU

Energy Efficiency

Directive 2012/27/EU

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on Energy Efficiency

- EU Energy Efficiency Directive = EU EED
- Amending Directives 2009/125/EC and 2010/30/EU
- Repealing Directives 2004/8/EC and 2006/32/EC
- Set of binding measures to help the EU reach its 20% energy efficiency target by 2020
- All MS are required to use energy more efficiently at all stages of the energy chain: from production to final consumption
- MS had to transpose the EED provisions into national laws by 5 June 2014

EU Energy Efficiency Directive EED

Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on Energy Efficiency

- Set of binding measures to help the EU reach its 20% energy efficiency target by 2020
- MS had to transpose the EED provisions into national laws by 5 June 2014
- Key provisions:
 - Article 3: National energy efficiency targets
 - Article 5: Renovation of central government buildings
 - Article 6: Public procurement
 - Article 7: Energy efficiency obligations (or alternatives)
 - **Article 8: Energy audits and energy management systems**
 - Articles 9-11: Smart metering and billing
 - Article 14: Energy efficiency in district heating and cooling
 - Article 15: Grids and demand response issues

DIRECTIVE 2012/27/EU

Article 8

Article 8: Energy Audits and Energy Management Systems

- MS must promote the availability to all final customers of high-quality and cost-effective energy audits, carried out independently and by qualified and/or accredited experts, and implemented and supervised by independent authorities
 - In-house experts or external energy auditors allowed
 - MS must put in place schemes to assure and check auditor quality
 - MS must establish minimum energy audit criteria according to Annex VI of the EU EED
- MS must develop programmes to encourage SMEs to undergo energy audits and the subsequent implementation of audit recommendations:
 - Support schemes or voluntary agreements covering energy audit costs and implementation of cost-effective audit recommendations
 - Bring to the attention how energy management systems could help SME businesses
- MS must develop programmes to raise awareness among households about the benefits of energy audits

Article 8: Energy Audits and Energy Management Systems

- MS must encourage training programmes for the qualification of energy auditors to facilitate the availability of sufficient experts
- MS must ensure that non-SMEs are subject to energy audits by 5 December 2015 and at least every 4 years from the date of the previous audit
- Non-SMEs implementing an energy or environmental management system, certified by an independent body according to relevant European or international standards, are exempted from the 4-yearly energy audit obligation, provided that the management system includes an energy audit meeting the minimum criteria
- Energy audits can stand alone or be part of a broader environmental audit, and MS may require the audit includes an assessment of the technical and economic feasibility of connecting to an existing or planned district heating/cooling network
- MS can implement incentives or support schemes for the implementation of audit recommendations, provided that these do not interfere with the EU State Aid Law

Large Enterprises

- Mandatory energy audits every 4 years
- First energy audit finished by 5 December 2015
- Large enterprises:
 - > 250 employees OR
 - > €50 million annual turnover AND €43 million annual balance sheet
- Exemptions:
 - Voluntary agreements requiring equivalent and equally regular energy audits
 - Certified (ISO or EN) energy or environmental management system with energy audit meeting minimum criteria of EED Article 8 Annex VI
- Encouragement to create incentives to implement measures recommended by energy audits (tax incentives, financial aid, advisory services, ...) and to introduce energy management systems



Definition of SME Adopted by the European Commission

Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (2003/361/EC) – ANNEX Title 1 Article 2:

“The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons AND which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.”

“The criterion of staff numbers (the ‘staff headcount criterion’) remains undoubtedly one of the most important, and must be observed as the main criterion; introducing a financial criterion is nonetheless a necessary adjunct in order to grasp the real scale and performance of an enterprise and its position compared to its competitors. However, it would not be desirable to use turnover as the sole financial criterion, in particular because enterprises in the trade and distribution sector have by their nature higher turnover figures than those in the manufacturing sector. Thus the turnover criterion should be combined with that of the balance sheet total, a criterion which reflects the overall wealth of a business, with the possibility of either of these two criteria being exceeded.”

Definition of large enterprises

- There is no official definition of large enterprises – in the legislation it is referred to as non-SME
- Inversing the SME definition:
 - 250 people or more **OR** turnover of 50 MER or more **AND** a balance sheet of 43 MER or more
- Some countries have misinterpreted this definition:
 - Sweden
 - Spain
 - Denmark
 - France
 - Greece
 - The Netherlands

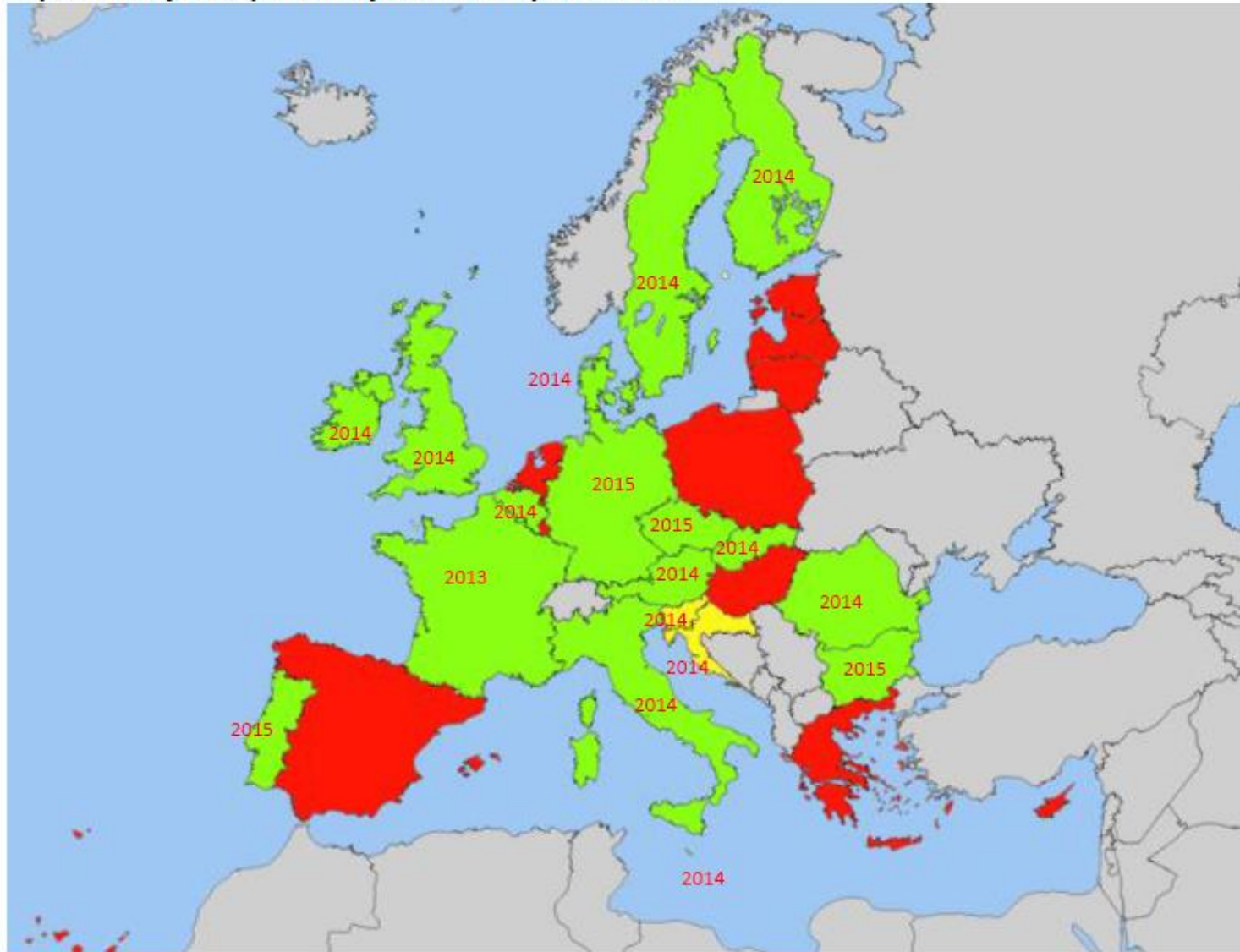


Autonomous, partner and linked enterprises

- In general, most SMEs are autonomous: completely independent, or with one or more minority partnerships (< 25% each) with other enterprises
- If the holding rises to up to 50%, enterprises become partners
- If the holding rises over 50%, enterprises become linked
- Depending on the category to which an SME belongs, it has to include the data of other related enterprises in other countries (anywhere in the world) to assess whether they can be considered to be an SME or not

IMPLEMENTATION STATUS

Map: Status of Transposition of Art. 8 EED by 5 June 2015





■ **Status of implementation:**

- Legislation + guidelines, more guidelines to come

■ **Obligated parties:**

- ≥ 250 employees and ($> \text{€}50$ million turnover or $> \text{€}43$ million balance sheet) (year n-1), for group collectively, globally
- Partner and linked enterprises according to EU recommendations

■ **Deadlines:**

- 29.01.2016: report SME status
- Q1 2017: report audit

■ **Process for compliance:**

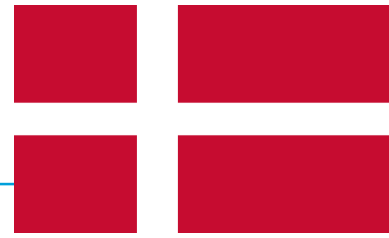
- Report to STEM the need to comply
- Report compliance to STEM

■ **Scale of audit:**

- The entire energy consumption of group needs to be reported but the energy audits can just be representative of a company's total energy consumption

■ **Penalties:**

- A percentage of a companies turnover during a certain time period



- **Status of implementation:**

- Legislation + guidelines

- **Obligated parties:**

- \geq 250 employees and \geq €50 million turnover or \geq €43 million balance sheet (year n-1), for group collectively, globally and at least 100,000 kWh energy consumed per year in Danish legal entity
- Partner and linked enterprises according to EU recommendations

- **Deadlines:**

- 01.03.2016: carry out valid audit and report compliance

- **Process for compliance:**

- Send required documents to Energinet, including energy audit report following DEA format

- **Scale of audit:**

- 90% of total energy consumption of company

- **Penalties:**

- Not published yet



- **Status of implementation:**

- Legislation + guidelines

- **Obligated parties:**

- \geq 250 employees or $>$ €50 million turnover and $>$ €43 million balance sheet, (year n-1), for group collectively, globally
- Aggregated data of all enterprises registered in Finland including linked and partnered companies abroad that are owned by the Finish LE

- **Deadlines:**

- 05.12.2015: carry out valid audit

- **Process for compliance:**

- Send summary of audit to Energimyndigheten no later than 3 months after the audit has been performed. Upon request, send entire audit report to Energimyndigheten

- **Scale of audit:**

- 90% of total energy consumption of group

- **Penalties:**

- There will be penalties based on turnover but the size is not yet decided

AUDITORS, AUDIT REQUIREMENTS AND OPPORTUNITIES

Minimum criteria Annex VI: Minimum criteria for energy audits including those carried out as part of energy management systems

- The energy audits referred to in Article 8 shall be based on the following guidelines:
 - be based on up-to-date, measured, traceable operational data on energy consumption and (for electricity) load profiles;
 - comprise a detailed review of the energy consumption profile of buildings or groups of buildings, industrial operations or installations, including transportation;
 - build, whenever possible, on life-cycle cost analysis (LCCA) instead of Simple Payback Periods (SPP) in order to take account of long-term savings, residual values of long-term investments and discount rates;
 - be proportionate, and sufficiently representative to permit the drawing of a reliable picture of overall energy performance and the reliable identification of the most significant opportunities for improvement.
- Energy audits shall allow detailed and validated calculations for the proposed measures so as to provide clear information on potential savings.
- The data used in energy audits shall be storable for historical analysis and tracking performance.



- European Standard on Energy Audits
- EN 16247-1: General Requirements of Energy Audits
 - Energy auditor suitably qualified and experienced, according to local guidelines
 - Energy audit process appropriate, complete, representative, traceable, useful and verifiable
 - Preliminary contact, start-up meeting, data collection, field work, data analysis, reporting and final meeting
- EN 16247-2: Energy Audits of Buildings
- EN 16247-3: Energy Audits of Processes
 - Energy use by processes (directly/indirectly), utilities and other
 - Process = production line, office, laboratory, research centre, packaging, warehouse, ...
 - Data = general company information, energy sources, energy management, materials transportation and handling, and a long list of production processes
- EN 16247-4: Energy Audits of Transport
- EN 16247-5: Competence of Energy Auditors
 - Training, skills and experience required

Requirements

- Energy auditor accreditation schemes
 - Available auditors
 - Competence
 - Fees for accreditation
- Energy auditor tools and training
 - Training availability
 - Per sector
 - Tools to use
- Energy auditors' register
 - A publicly available list of qualified/accredited energy auditors
- Mutual recognition
 - Is an auditor accredited in one country also allowed to do an energy audit in another country

Opportunities

- Trainings
 - Depending on how the scheme is set up, mandatory trainings of all energy auditors might be required
- Keep register of all energy audits executed
- Accreditation of auditors
- Reporting tools
- Executing energy audits
- Implementing and certifying ISO 50001 systems

CONCLUSIONS

Article 8

- Not yet implemented in all 28 Member States
- Implemented differently in all of the countries that have legislation in place
- Will lead to energy efficiency just by the fact that companies will have a higher awareness of opportunities and a list of specific opportunities for them
- Will likely increase the uptake of ISO 50001
- There is an opportunity for Norway to implement article 8 effectively by learning from experiences from other Member States
- There is an opportunity to do more in the energy audit space including:
 - Developing trainings
 - Materials
 - Accreditation system
 - Execution of energy audits
 - Implement and certify ISO 50001



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