

material efficiency schools energy saving
consumers industry transport carbon dioxide
wood chips traffic properties public sector
recycling biomass renewable energy solar energy climate change
energy efficiency energy auditing
service sector hydro power wind energy cooperation

Implementation of the National Energy Strategy and Energy Efficiency Agreements in Finland 2008–2016

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heat pump environment municipal sector construction

Motiva - forms of operation

An expert company promoting efficient and sustainable use of energy and materials

- support and monitor the implementation of the voluntary **energy conservation agreements**
- to develop and market **energy audits and analyses**
- to accelerate the **introduction of advanced energy saving technologies**
- to influence people's attitudes and habits
- to provide **programme and project management services**

Energy efficiency agreements in Finland 2008-2016

- voluntary based, no legislation connected to the agreement
- the way to implement the directive on energy end-use efficiency and energy services
- alternative and complementary mean for regulations and taxes
- motivation to join the agreement
 - flexible instrument for companies and communities
 - possibility to prove energy efficiency for environment authorities
 - **energy audits and investments are subsidised by the government**



ENERGY EFFICIENCY
agreements

Motiva's role in the field of agreements

Together with agreement partners

- preparation of new agreements
- marketing of agreements with other parties
- developing tools and services to promote execution of the agreements
- helping companies and communities to implement the agreement
- yearly sectoral reporting

In addition:

- developing and maintaining the monitoring system
- yearly impact evaluation of the agreement scheme
- general information (brochures, news, www-pages etc.)



ENERGY EFFICIENCY
agreements

Energy Efficiency Agreements 2008–2016 – responsibility in Ministry of Employment and the Economy (MEE)

ENERGY EFFICIENCY AGREEMENT CONFEDERATION OF FINNISH INDUSTRIES (EK)

INDUSTRY

SERVICES

ENERGY PRODUCTION

ENERGY EFFICIENCY AGREEMENT AND PROGRAMME MUNICIPAL SECTOR

CITIES

MUNICIPALITIES

JOINT
MUNICIPALITIES

HÖYLÄ III ENERGY EFFICIENCY AGREEMENT

OIL HEATED BUILDINGS

DISTRIBUTION OF THE
HEAT- AND TRANSPORT-
FUELS

UNDER CONSIDERATION

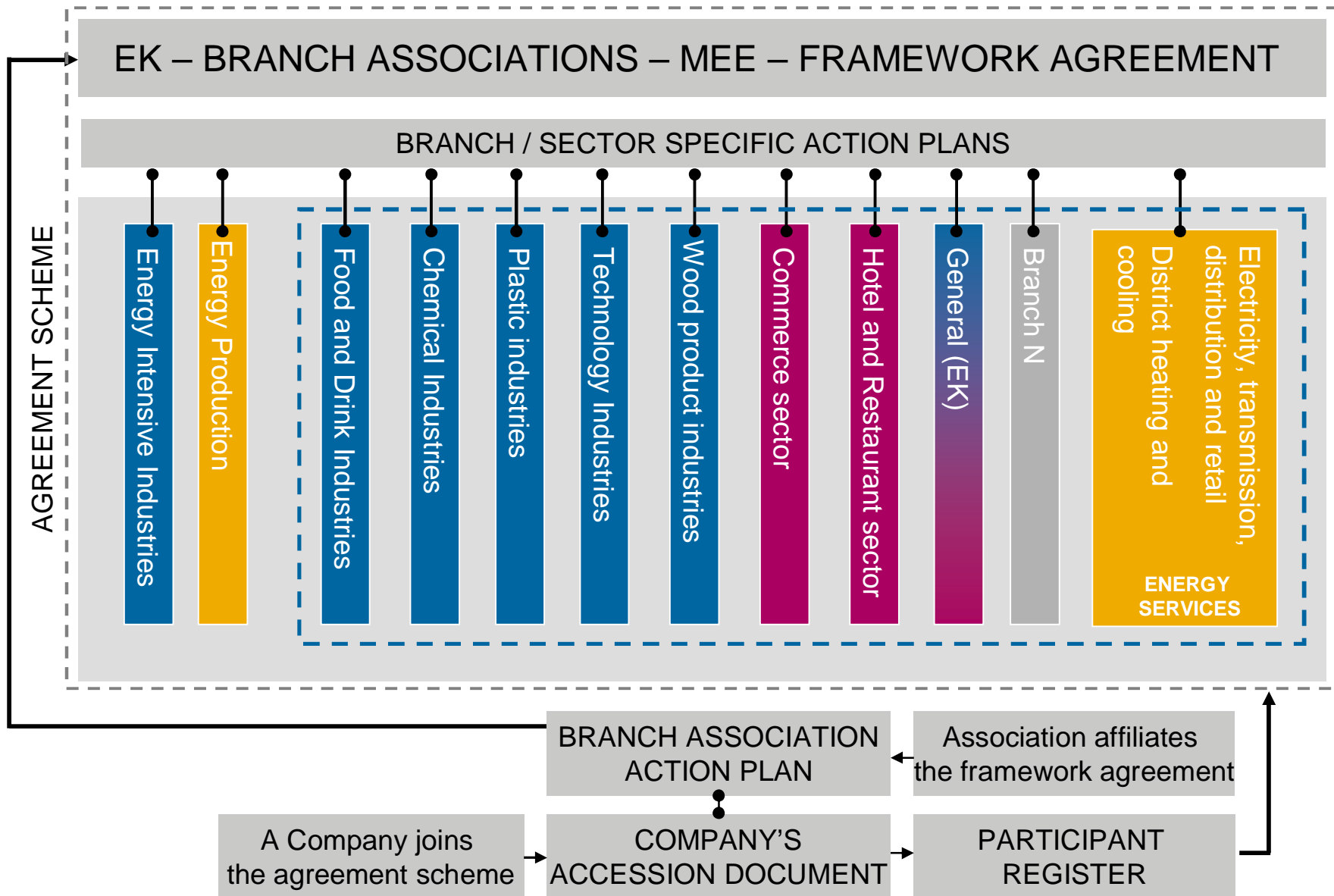
PROPERTY MANAGERS
AND INVESTORS

Other Energy Efficiency Agreements – responsibilities in other ministries

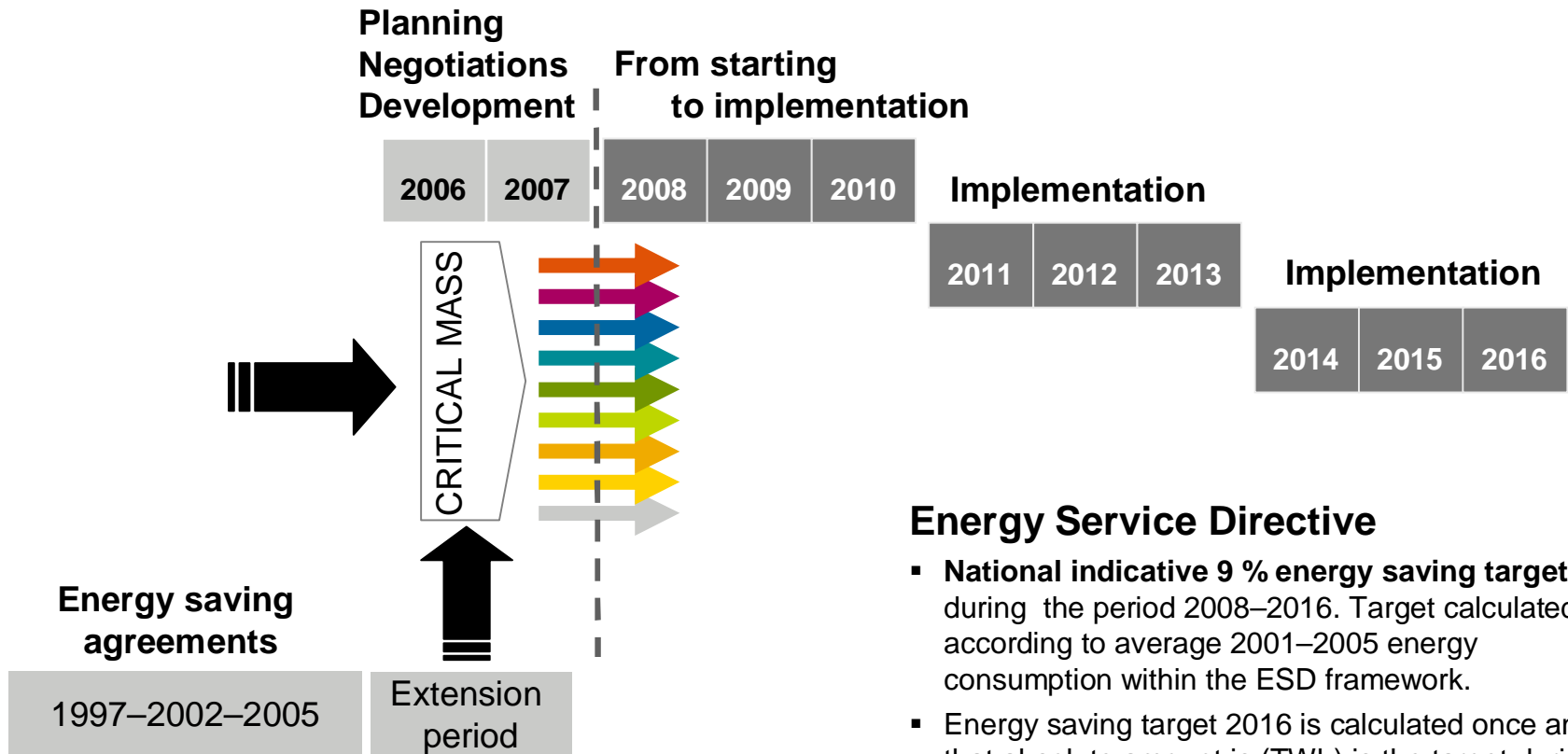
- **Transport** (Ministry of Traffic and Communication)
 - Truck and van transportation
 - Public transport
 - New energy efficiency agreements 2008-2016
- **Agriculture** (Ministry of Agriculture and Forestry)
 - Planning phase for an agreement going on
 - Target to start totally new energy efficiency agreement in 2009
- **Housing properties** (Ministry of Environment)
 - Energy saving agreement 2002-2012
 - Target to start totally new energy efficiency agreement in 2010



ENERGY EFFICIENCY
agreements



Energy Efficiency agreements 2008–2016 have a central role to implement the Energy Service Directive in Finland

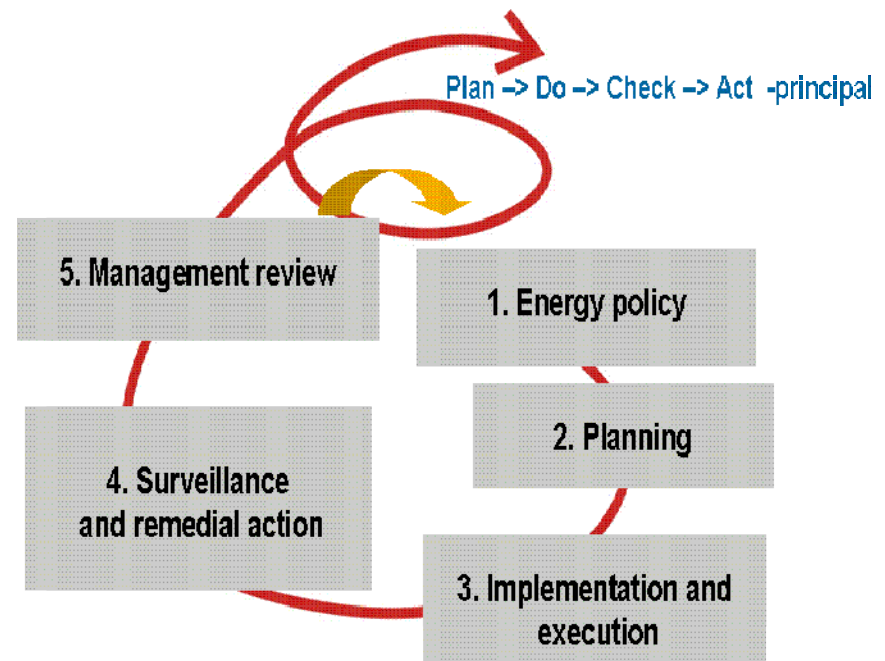


Energy Service Directive

- **National indicative 9 % energy saving target** during the period 2008–2016. Target calculated according to average 2001–2005 energy consumption within the ESD framework.
- Energy saving target 2016 is calculated once and that absolute amount is (TWh) is the target during the whole ESD period
- **The indicative ESD target for Finland is 17,8 TWh by 2016**

What is new in the Energy Efficiency Agreements 2008 -2016?

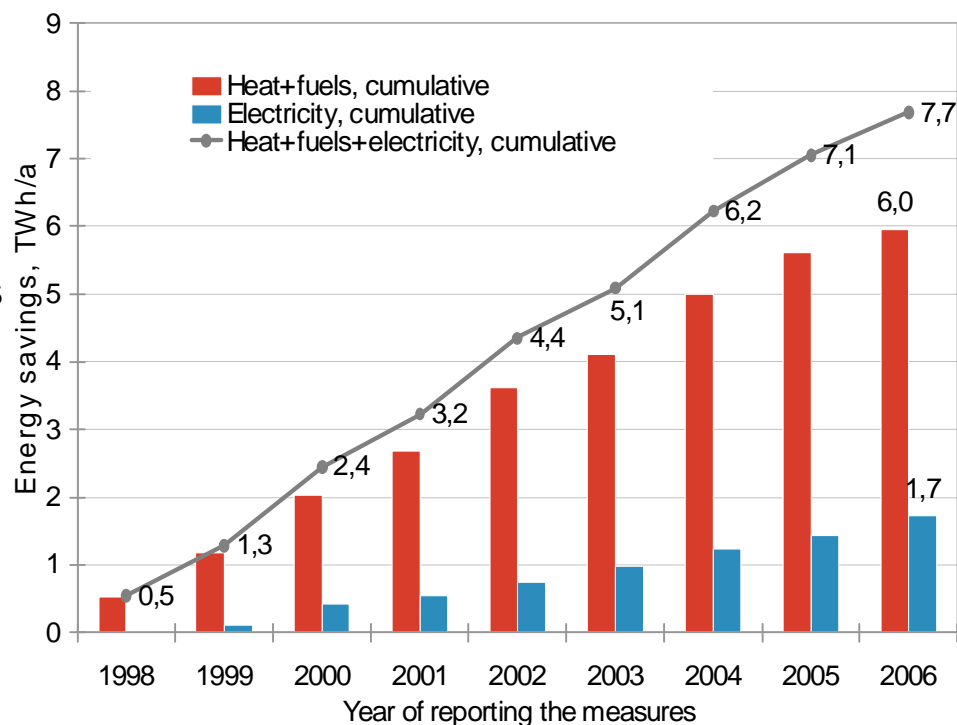
- The needs of different branches of industry and different kind of energy users will be emphasized
- Tailored action plans for energy intensive industry and medium size energy users and e.g. large and small municipalities
- The idea of continuous improvement (“from project to process”) more emphasized in all agreements



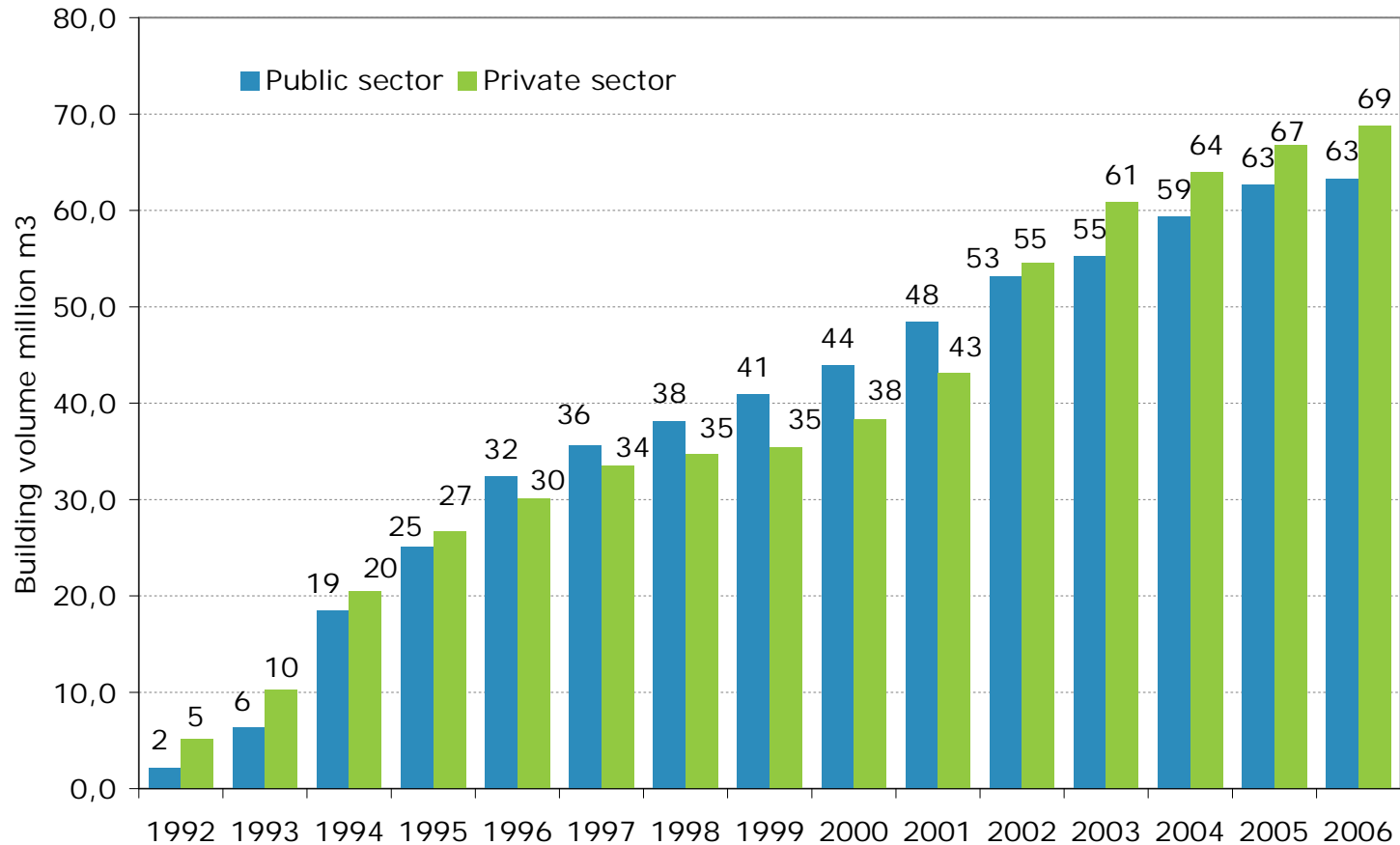
ENERGY EFFICIENCY
agreements

Cumulative energy saving impact of conservation measures reported as implemented by industrial, energy, municipal and property and building sectors

- Of the total energy conservation impact (7.7 TWh/a) the share of industry is 81%
- and power plant sector 15%.
 - Over 360 million euros investments to carry out these measures
 - Cost savings approx. 150 million euros per year
- Share of electricity of the total energy savings per year 22%
- Carbon dioxide emissions reduced over 2,5 million tonnes per year



The cumulative development of subsidized energy audit volumes in the service sector 1992-2006



Energy savings by energy audits during 1992-2005

- **Service sectors and industry**
 - Annual savings 1 TWh and 30 M€ in 2005
 - Cumulative savings 8,5 TWh and 270 M€ (1992-2005)
- **Average realised savings in the municipal sector service buildings**
 - 9 % in heat and fuels
 - 5½ % in electricity
- **Average realised savings in the private service sector buildings**
 - 12 % in heat and fuels
 - 4 % in electricity
- **Average realised savings in industry**
 - 6...9 % in heat and fuels
 - 3...5 % in electricity



ENERGY EFFICIENCY
agreements

Innovations and the agreements – what is the connection?

- promotes the introduction of new, energy-efficient technology
- important that enterprises have the **best possible technology** and expertise at their disposal
- close co-operation models will be created within the agreement with research and technology programmes
- the arrangement will promote research and development partnerships between the energy technology and service suppliers



ENERGY EFFICIENCY
agreements

Energy Audits – challenges in the future

Lifecycle energy and emission assessments and combination with energy performance certificates

Monitoring measures taken and evaluation of energy and emission savings

Development of new audit models and procedures (transport, agriculture, material efficiency)

Training and authorisation of industrial auditors, “On-line” -quality control during the audits

Auditor's Knowledge Levels

(Dreyfys/UCA 1988 & Salama 2002)

Knowledge level	Knowledge of technical contents of object	Knowledge of working processes
(0.)	(Doesn't know contents of the area)	(Doesn't know tasks of the area)
1. Novice	Knows something of contents of the area	Trains guided execution of sub-tasks
2. Advanced beginner	Knows quite well contents of the area	Clears routine tasks, trains other tasks of the area
3. Competent	Knows well contents of the area	Knows tasks of the area and can handle difficulties
4. Proficient	Knows very well and develops subareas	Can combine knowledge of sub-areas and train other auditors
5. Expert	Knows very well and develops new areas	Widely recognized expert and teacher

More information
www.motiva.fi/en