



**ENERGI EFFEKTIVISERINGS FÖRETAGEN**

# **Energy Efficiency Suppliers Association**

# Sweden and Energy Efficiency

- History of working with healthy indoor environment combined with energy efficiency
- Requirements on indoor environment has driven energy efficiency

# Energy Efficiency Suppliers Association

- Network of companies selling energy efficiency
  - products and/or services
  - Including energy service companies
- Managing the European Code of Conduct

# Why did we start the network?

- There was a lack of an "energy efficiency industry" lobbying in Sweden
- To improve the dialogue between members and building owners/industries
  - How do we sell energy efficiency? Can we do that better?
- To improve the companies knowledge of technologies in adjacent areas

# Areas

- Ventilation
- Lighting
- Insulation
- Solar shading
- Cooling
- Heating
- Controls
- Plumbing
- Energy services

# European experiences

Table 5. Number of companies and market volumes in the EU countries, Norway and Switzerland.\*

	number of ESCOs		market size		market potential
	in 2010	in 2013	in 2010	in 2013	estimated in 2012
<b>EU</b>					
Austria	over 50	over 50	n/a	€15-20 m	n/a
Belgium	10-15	10-15	n/a	€5 m	€500 million-several billion
Bulgaria	few	7-12	€6 million	€33 million (?)	€500-900 million
Croatia	2	10	€10 million	€100 million	n/a
Cyprus	0	0	n/a	0	n/a
Czech Republic	8-10	20	€2-4 million	€10-20 million	€100-500 million
Denmark	10	15-20	€8-25 Million	€140-150 million	€1 billion
Estonia	2	2 (3?)	n/a	n/a	€100 million (renovation of buildings)
Finland	8	5-8	€4 million	€10 million	€200 million
France	100	350	€4-5 billion	€75-100 m for EPC, €3.2 b/year for all	€250-500 m for EPC and €5 billion for all ESCO projects
Germany	250-500	500-550	€1,7-2,4 b/a	€3-4 billion, of which €150 million is EPC	€20-30 billion

	Nr of ESCOs		Market size		Market potential
	2010	2013	2010	2013	2012
Greece	2	5	n/a	0	€5 million
Hungary	30	10	n/a	n/a	n/a
Ireland	15	ca. 30	n/a	n/a	n/a
Italy	100-150	50-100	€275 M in 2008; €387 M in 2009	€500 million	€1-10 billion
Latvia	5	8	€1-1.5 million	€2-3 million /year by one of the 7 ESCOs	€100 million-€10 billion
Lithuania	6	3-5	n/a	n/a	n/a
Luxembourg	3-4	3-6	0	0	€5.1-6-2 million
Malta	0	0	0	n/a	n/a
Netherlands	50	50	n/a	n/a	€30 million/year
Poland	3 to 10	30-50	€5 - €10 million/year (current value)	EUR 10-25million (2011) (annual turnover)	€25-75 million annually (economic potential)
Portugal	10 to 12	100	€10-30 million	n/a	€100-200 million
Romania	14	15-20	ca. €50 million	n/a	n/a
Slovakia	5	6-8		n/a	n/a
Slovenia	2-3	5-6	n/a	€3million	€15 million
Spain	15	20-60	€100	€300-400 m/yr	€1.5-2-6 b
Sweden	8		€60-80 million	€60-80 million	€300 million/yr
United Kingdom	20	30-50	€400 million	n/a	n/a
<b>Other European countries</b>					
Norway	5	10	€25 million	n/a	n/a
Switzerland	76 (7-10?)	6	€170-350 m/year (uncertain)	uncertain estimates	

# Conclusions

## European market

- Market is growing and becoming more mature
  - Not in all countries though
  - Mature markets in Czech Republic, Austria, France and Germany
- The roll of facilitators
  - prepare a tender
  - selecting the winner
  - concluding a contract
  - monitoring and verifying savings



# Type of contracts

- With or without financing
- Shared savings/guaranteed savings
- Combination of energy efficiency and energy supply

# Target sectors

- Public (most common)
  - Buildings
  - Street lighting
- Industry
- New areas
  - Residential buildings
  - Infrastructure (transport)

# Additional motivations

also called Non energy benefits

- Clients
  - Climate concerns
  - Better comfort /indoor environment
  - Enables general renovation
- ESCOs
  - Loyalty
  - Attracts more customers
  - Comply with regulation

# Success factors

- Long-term commitment by government
- Supportive policy framework
- Dedicated ESCO legislation
- Complementing measures (EEO)
- Removal of regulatory barriers
  - Public procurement regulation
- Esco standards (definitions)

# Success factors

- Hand books
- Flexibility of services
- ESCO associations
- Energy price

# Type of companies

- Engineering firms
- Energy utilities
- Companies selling control gear, building automation systems

# The Investor Confidence Project (ICP)

- Road map from retrofit opportunity to reliable results
- Protocols for commercial and multifamily buildings
- Reduces transaction costs
  - Existing standards and practices
- Increases confidence

# Nordic experiences

## 9.2 Overview of the Nordic EPC market – table

OVERVIEW OF THE NORDIC EPC MARKET					
	DENMARK	SWEDEN	NORWAY	FINLAND	ICELAND
<b>1. The EPC market</b>					
EPC started	2006	1990-1995	1990-1995	2000	
Number of projects	30	100	55-60	80 - 100 (most small)	No known projects acc. to EAI
Number of projects per year (recent years)	8	1-2 public private unknown	8-12	4-6 public private unknown	
EPC providers (ESCOs impl. EPC)	8 (25 bidders)	3 (6 bidders)	5 (7 bidders)	7 (10 bidders)	
EPC Clients	Public	Most Public (some private)	Public	Many small private A few medium sized public	
EPC Facilitators	4	2 (5-6 potential)	1 (2 -3 potential)	None?	



	DENMARK	SWEDEN	NORWAY	FINLAND	ICELAND
<b>2. National characteristics</b>					
Legal framework/obligations	NO	NO	NO	NO	
A typical EPC project;	Large	Medium	Medium	Small -> Medium	
Sector	Public	Public	Public	Private and Public	
Size	130.000 m2	120.000 m2	17-150.000 m2		
Number of buildings	70-80 (av.74)		10-40 (av. 20)	1-15	
Savings	20-30 %	18 %	25 - 50 %	200-33 000 MWh annually	
Length	15-20 years	5-10 years	7-18 years	2-5 years recently 5-10	
Investments	6-20 MEUR	1-5 MEUR	3-6 MEUR	0,5 - 3 MEUR	
Typical measures	Building envelope, lighting, HVAC, EMS, heating, automation	Build envelope, EMS, HVAC, lighting	Build envelope, EMS, Automation, HVAC, heating, lighting	Hist; Low hanging fruits Recent; Build envelope/ EMS/HVAC/lighting + street lighting/sport halls	
Financing	Clients through gov. Supported loans	Clients - no gov. support at present	Clients through gov. green interest rates	ESCOs or Clients - no gov. support ?	
The most recent projects	2015	2015 (before that 2011?)	2015	2014	
Model documents	Official guideline ('13) Standard in progress	Official guidelines ('06) Swedish Energy Agency	National Standard ('14)	Official Guideline, Motiva ('12)	

	DENMARK	SWEDEN	NORWAY	FINLAND	ICELAND
<b>3. Governmental strategies to boost the EPC market</b>					
Legal EE framework	YES	YES	NO (Municipal climate plans)	YES	
Legal EPC specific framework	NO	NO	NO	NO	
Official networks or associations	YES (ESCO network)	NO	NO	NO	
Research programs	YES		YES		
<b>4. Financial instruments to support EPC</b>					
Support scheme or EE grants in place	YES	NO	YES	YES	In progress
EPC specific grant scheme in place	NO	NO	NO	NO	

	DENMARK	SWEDEN	NORWAY	FINLAND	ICELAND
<b>5. Barriers and drivers for increased use of EPC</b>					
<b>Main drivers</b>					
	Success stories	Success stories	Success stories	High saving potential established	Saving potential on lighting (LED)
	Strong gov. EE framework	Good cooperation betw ESCOs and clients	Gov. EE framework	Gov. EE framework	New dev. gov. subsidies of electric heating in households
	Economic gov. support	High saving potential established	Economic gov. support	Economic gov. support	
	Upcoming EPC Standard		Experienced EPC facilitator		
	Good cooperation betw. ESCOs and clients		Official EPC standard		
<b>Main barriers</b>					
	Uncertainty about long term financing	Complexity of Public Procurement Act	Lack of trust/knowledge (in parts of Norway)	Lack of knowledge	Low priced geothermal energy for heating
	Lack of trust/knowledge among some potential clients	Lack of economic gov. support	Lack of available/ experienced ESCOs	Lack of trust	Low prices on electricity from hydro power
	Limited specific EPC support from the national administration	Low energy prices	Lack of facilitators	Lack of BP Examples/ Success stories	Low cost savings on EE measures
		Lack of trust		Lack of facilitators	Already use green energy

# Market in Scandinavia

- Denmark and Norway
  - Strong and growing
- Sweden
  - Market is now weak (public sector)
  - Struggling with issues of knowledge, trust and uncertainties on public procurement

# Crucial conditions

- Good business culture
  - Trust in technical skills and ethical behaviour
- Driving force
  - Municipalities (Denmark)
  - EPC facilitator (Norway)
  - Energy authorities (Finland)
  - EPC companies (Sweden)
- Success stories and documented results

# Swedish market

- Started around 1990
- Public sector – customer financed
- Private sector – more often financed by EPC provider
- Market growth until 2010
  - End of subsidy scheme
  - Dispute in the city of Stockholm

# Other factors (my opinion)

- Dispute between ESCOs
  - Too large projects? Too much at stake?
  - Different type of ESCOs blaim each other
- Too large profits?
  - ESCOs picking the best investments
- Contracts too complicated
  - Not understood by customers
  - Customer claims that "succesful" projects are NOT succesful
- ESCOs more competent in building measures than customer

# Legal framework

- Public procurement act (from 2008)
- Act supports EPC
- BUT ... some judge the act too complicated
  - Makes municipalities uncertain
- BUT ... EPC procurement is possible
  - Knowledge on the procurement process



# Recommendations

from the report "EPC in Nordic countries"

- Governmental strategies for information and training
- Governmental financial support schemes
- National standards for EPC
- EPC website
- European Code of conduct
- Increased number of EPC facilitators
- One Nordic EPC market

# Possible Development in Sweden

- Different kind of ESCOs
- ESCOs more perceptive to customer demands/needs
  - More flexibility
  - Smaller projects
  - Shorter projects
- Success stories



**Tack för att ni  
har lyssnat!**

**Thanks for  
listening!**