



## EPC in the Nordic Countries



norden

Nordisk Ministerråd



NEE

NORSK ENØK OG ENERGI

## NEE

### Consulting company

- Advisory, engineering and information since 1992
  - Interdisciplinary expertise and extensive technical skills
- Promote efficient energy use and reduce CO<sub>2</sub> emissions
- International projects/EU-projects (IEE/Horizon 2020)
  - EPC market development in Europe since 2004
- EPC currently our largest business area



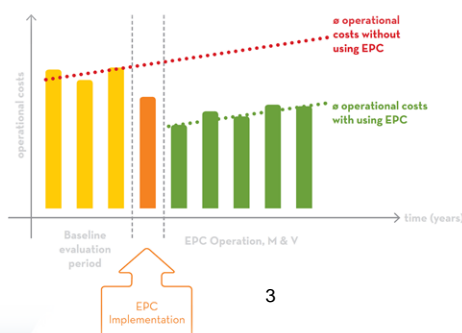
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## EPC – Energy Performance Contracting: Model for implementation of EE measures with guaranteed results

### Main element:

Energy savings used to cover cost of investments



– Too good to be true?

### EPC – customer:

*What is the catch – is there really no risk?*

### EPC – provider (ESCO):

*This is too risky – too many years - much can happen.*

**Both:** *This is way too complicated.*




## A typical Nordic EPC project

- Municipality, pools of municipalities, counties
  - Pools of buildings – schools, city hall, nursing homes, etc.
  - Many EE measures – holistic approach, building envelope, lighting, HVAC, EMS, heating and automation
  - Open tender procedure
  - 100 % financed by client
- 
- 18 – 50 % guaranteed energy savings annually
  - Investments between 0,5 – 20 MEUR
  - Duration 5 – 18 years



## Characteristics Denmark

- Large projects
- Measures also include comprehensive renovation
- Financial support scheme
  - Good lending conditions – gov. supported interest rates
  - Municipalities exempted from budget limitations
- Official EPC guideline since 2013
- Official National Standard on EPC in progress
- The municipalities initiative and commitment
  - Climate Agenda
  - Maintenance lag
- Success stories


DK 	
Project Characteristics	
Size	130.000 m2
Number of buildings	70-80 (av.74)
Savings	20-30 %
Length	15-20 years
Investments	6-20 MEUR





## Characteristics Sweden


- Long experience – looked upon as pioneer – success stories
- Market “crash” in 2009 (financing scheme removed)
- Financial support schemes on and off
  - KLIMP (-2008), OFFROT (2005-2009)
  - Financial support for EE improvement measures(2010-14)
- Uncertainty about Public Procurement Act
- Lacking continuity in national strategies
- Complex implementation process
- Planned information activities
- EEF with upcoming statistics

SE 	
Project Characteristics	
Size	120.000 m2
Number of buildings	
Savings	18 %
Length	5-6 years
Investments	1-5 MEUR



## Characteristics Norway

- Municipal cooperation
- Measures also include none profitable measures
- Young market – few bad experiences so far
- Financial support schemes in place (2)
- Upcoming statistics
- Official Standard for EPC
  - NS6430
- One experienced facilitator
  - Advantage; Uniform process
- Lack of capacity
  - Facilitators, ESCOs

NO 	
Project Characteristics	
Size	17-150.000 m2
Number of buildings	10-40 (av. 20)
Savings	25 - 50 %
Length	7-18 years
Investments	3-6 MEUR





## Characteristics Finland

- Former register show smaller projects/measures
    - More projects in private sector
  - Recent project in public sector more typical
  - Financial support scheme in place
  - Lack of knowledge (trust)
  - Young market – slow, but moving
  - EPC Guideline not promoted
  - Official register might be renewed
- 
- Projects in later years might serve as success stories

FI		
Project Characteristics		
Size		
Number of buildings	1-15	
Savings	200-33 000 MWh annually	
Length	2-5 years - recently 5-10	
Investments	0,5 - 3 MEUR	



## EPC in Iceland

- No known EPC projects (IEA)
  - 90 % of buildings use geothermal energy for heating

«Iceland is already carbon free in heat- and electricity production»



### Possibilities for EPC market development

- The lighting sector
  - Conventional lighting to LED – some saving potential
  - Municipal street lighting (by suppliers)
- Electricity heated buildings (10 %)
  - Subsidies might be directed towards EE investments





## Comparison

- **Most EPC projects implemented in public sector**

- Smaller projects in private sector
  - ✓ Projects in private sector more difficult to map
- Highest number of private projects in Finland

- **Little/no financing by ESCOs in public sector**

- Might be a hurdle if aim is to expand to private sector

- **Main market drives different**

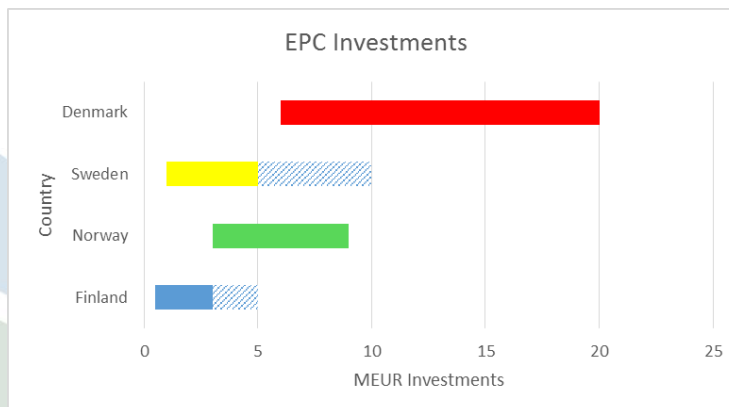
- Denmark: Municipalities
- Sweden: ESCOs
- Norway: Facilitator
- Finland: Government/ESCOs

- **The EPC model**

- NO/DK/FI – in line with general definition
- SV - excess savings not shared between client and provider
- All - Wide range of measures, including building envelope



## Size of Investments





## Comparison

- **Gov. financial schemes**
  - DK/NO/FI – financial scheme(s) in place
  - SV – on and off – none at present time
- **Variation in complexity of C&V routines**
  - Sweden more complex implementation process
- **Difficulties with procurement process/laws**
  - Sweden and Finland experienced lawsuits/disputes
- **Documented high savings in all countries!**
  - Increasing in all countries



## Comparison

- **Model documents, guidelines, official standards**
  - Seems crucial for success
  - NO/DK – official standard for EPC, contract models
  - FI/SV – guidelines – not well known or utilized
- **Good business culture - a common success factor**

### Status:

- **EPC markets in Denmark and Norway is growing**
  - DK strong and stable
  - NO growing – market boost in 2015
- **EPC markets in Sweden and Finland seems to be weaker**
  - Both SV/FI new public projects in 2015



## Recommendations

### Based on what is needed to boost the market

- **Strategies for information and training**
  - Increases knowledge and trust
  - Increased number of EPC facilitators and ESCOs
- **Financial support schemes**
  - Removes uncertainties due to the complexity of the model
  - Gov. quality stamp
- **National Standards for EPC**
  - Makes process more foreseeable
- **EPC website**
  - Gather crucial information in one place
  - Administration of information and registers
  - Statistics, BP database, Guidelines, Standards



### The way forward



- **Nordic cooperation projects**
- **Nordic webinar on EPC**
  - The report and it's results
  - Relevant actors from DK, SV, NO, FI





**“We have lost millions  
for several years!”**



**“I am so looking forward to using the savings for  
good causes in my municipality!”**

*Hans-Petter Heimholt, EE coordinator, Skien municipality*



**Tak for din opmærksomhed!  
Tack för er uppmärksamhet!  
Takk for oppmerksomheten!  
Kiitos huomiosta!  
Takk fyrir athyglina!**

