



Herlev
Kommune

A light gray map of Herlev Municipality is overlaid on the page. The map shows the town's layout, including streets and buildings. The word 'Herlev' is printed in a light gray font across the center of the map. Other faint text like 'erg' and 'espring' is visible on the map.

Public-Private Partnership in Herlev Municipality

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Project manager, Real Estate, Herlev Municipality

PPP, Warsaw, Poland 17. november 2015

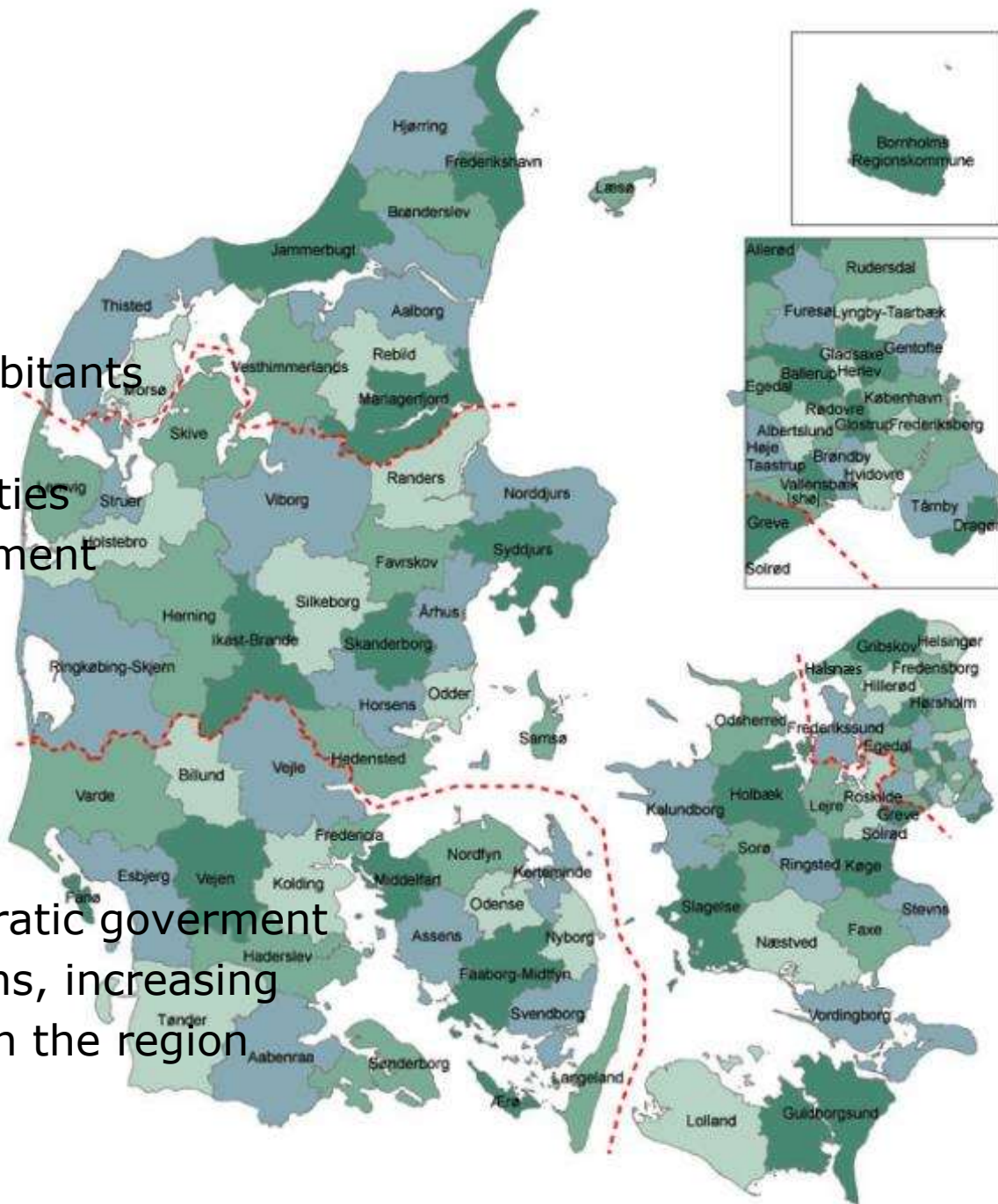
Facts

Denmark

- 6 million inhabitants
- 5 regions
- 98 municipalities
- Liberal government

Herlev

- Social democratic government
- 28.000 citizens, increasing
- 20.000 jobs in the region



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We make energy...

Energy production
& transmission

Energy usage

Wind energy

Solar energy

Hydro

Biofuels

Hydrogen

Nuclear

Appliances

Control

Security

Lighting

Machines

IT servers



Industry

Safe

Reliable



Efficient

Buildings

Productive



Energy &
Infrastructure

Green



IT &
Networks



Residential

...with up to 30% savings everywhere

Schneider Electric Global

At a glance

24 billion € sales (2013)

43% in new economies

170,000+ employees

71 global R&D centres

4-5% of sales devoted to R&D

North
America

25%

28 300

Western
Europe

28%

44 200

Asia
Pacific

27 %

42 600

Rest of
World

20%

22 000

FY 2012 sales

YE 2012 employees



Industry
25%



Residential 9%



Buildings
27%



Energy &
Infrastructure
25%



IT & Networks 14%

Why ?



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Primary goal:

- To reduce the energy cost of Herlev Municipality
- To reduce the maintenance backlog in Herlev Municipality buildings

Key conditions:

- Repayment 20 years
- The project is self-financing and does not burden Herlev Municipality's economy in general
- To lead the risk of any adverse outcome of energy on to the private supplier for 5 years after delivery



Agenda conference and this post

PHASE	WHAT ABOUT	This post
Conception	The needs of the public partner and decision on the implementation of PPP project	Why ?
Negotiations	How did the process look like? * What surprised us during the negotiations, what knowledge did we gain? * how we negotiated division of risks and responsibilities what was the most important to us?	How ? Process
Signing contract		
Partnership in practice Stage investments and infrastructure management	KEY ISSUES - SPECIFICS OF CONTRACT * the areas of best cooperation	Cooperation
Additional value	What additional value did the partnership bring?	Benefits ?

Why ?



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Why we use a supplier and do not perform in-house:

- Narrow staffing
- Time
- New organization
- Reliability
- Tender
- Backlog





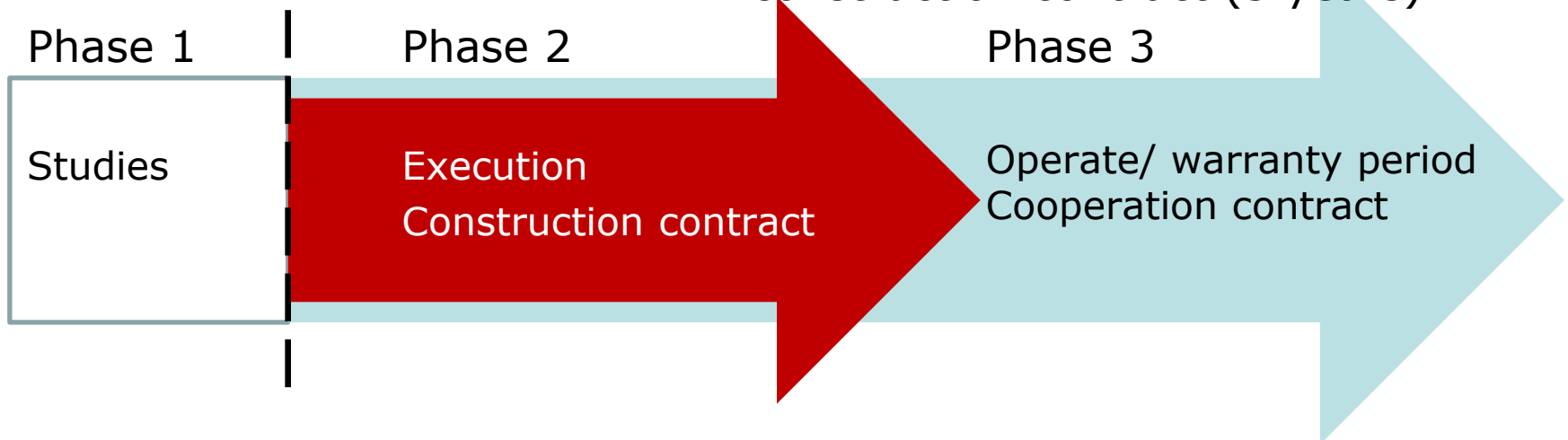
How ? - The ESCO model

Introductory exercises:

- choice of client advisor
- pre-qualification
- EU tender
- Phase 0/ business case

Energy Service Company in:

- 3 Phases
- feasibility studies, performing, warranti
- 2 contract forms
- cooperation contract (10 years)
- construction contract (5 years)





How ?

Tender

- EU tender
- 7 Buildings as award criteria
- Primarily studies for all buildings – the potential

Result of feasibility studies (Phase 1)

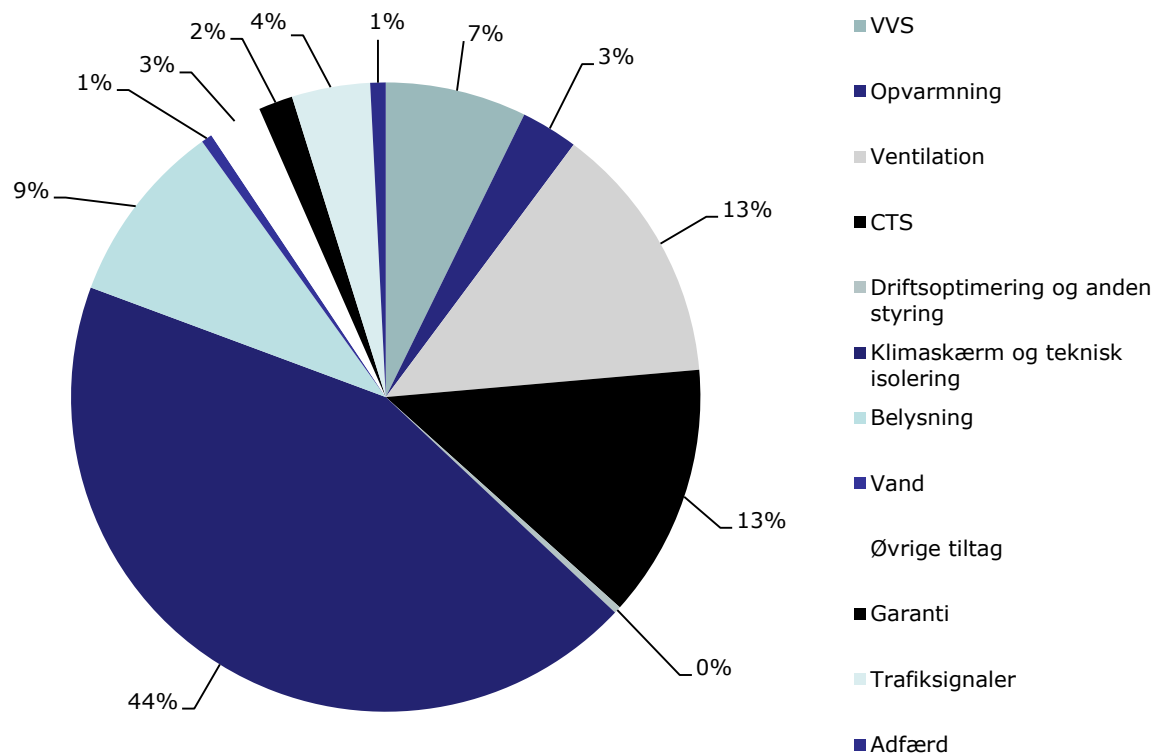
- Private Partner is Schneider Electric AS
- Completed feasibility studies (Phase 1)
- The volume (extent) of buildings is ready for political accept



How ?

Result of feasibility studies (step 1)

- Large project, investment 118 mil., loan of 17 million €





PPP - economy

Result of feasibility studies (step 1)

In mill. €	Large project	Small project
Capital investment	16	11
Client loan	17	11.4
Annual savings	0.8	0.6
Simple payback, years	21.7	17.2
Backlog reduced	11	5.6



PPP - economy

Result of feasibility studies (step 1)

A mixture of Schneider's large and small project is chosen:

- Capital investment 16 € mill.
- Capital investment outside 0.8 € mill.
- Client costs 1.2 € mill.

- In total, loan financing over 5 years 17 € mill.

Pay back 20 years from 2019 - 2039



Project management

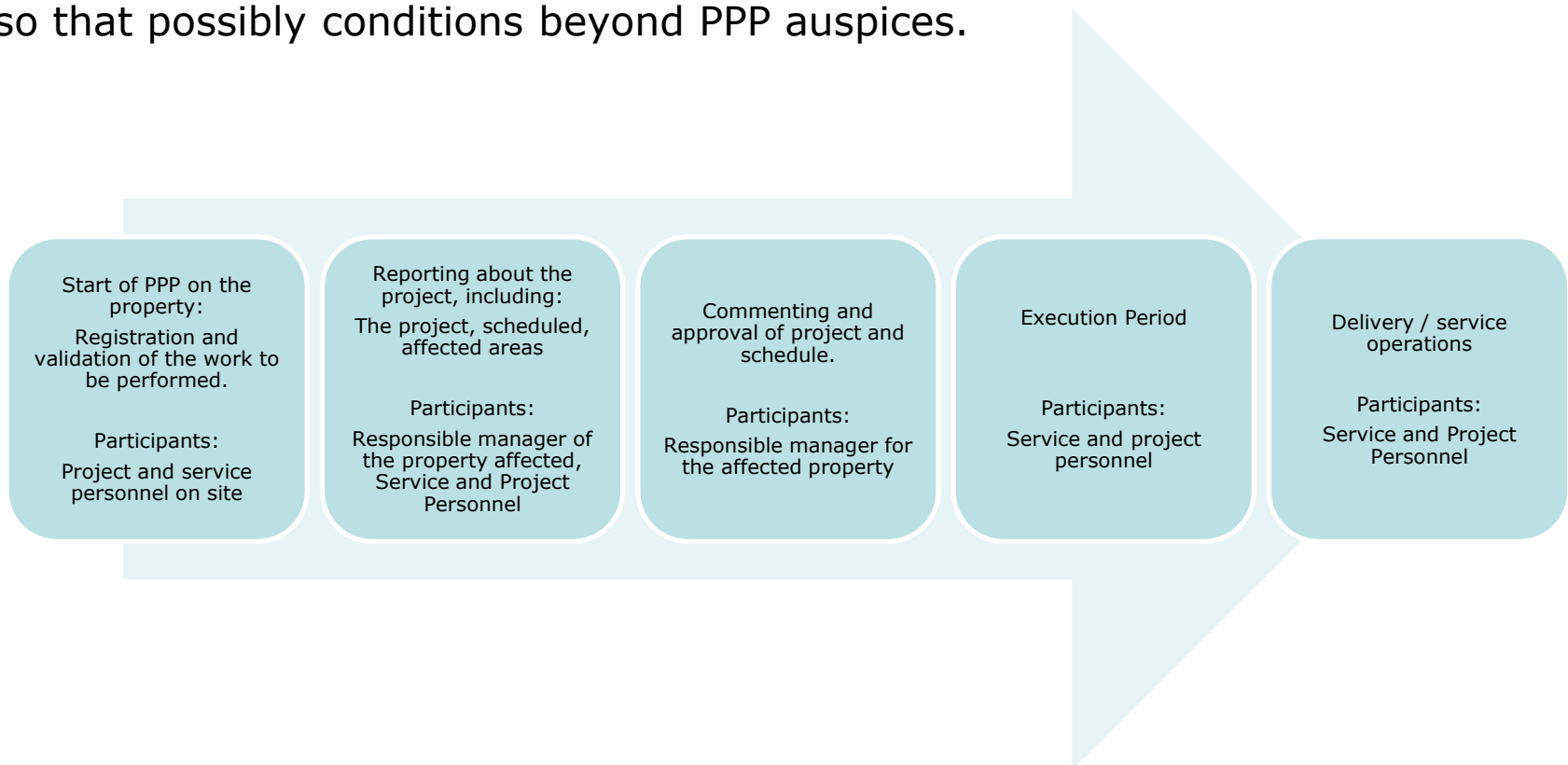
- Political accept 2014, start-up in 2015
- Contract adjustments with Schneider 2015
- Requirements engineering, building list and "baseline" basis
- Extent of buildings and proces (over 5 years)
- Design, offer in trade contracts and operation
- Delivery and education of staff
- Stakeholder involvement and management, staff and users in affected buildings
- Stakeholder involvement and management, local business
- Risk management



Process

The chart below shows how the process from start-up / registration of each property will continue until delivery and operation.

Service employees are included at an early stage before the design is started so that possibly conditions beyond PPP auspices.





Work 2015

Work carried out in 2015 are primarily technical contracts:

- Replacing lighting / fixtures
- Substitution and- /or rebuilding of ventilation systems
- Technical Insulation
- Traffic signals
- Computer power savings
- Window replacement (building envelop)

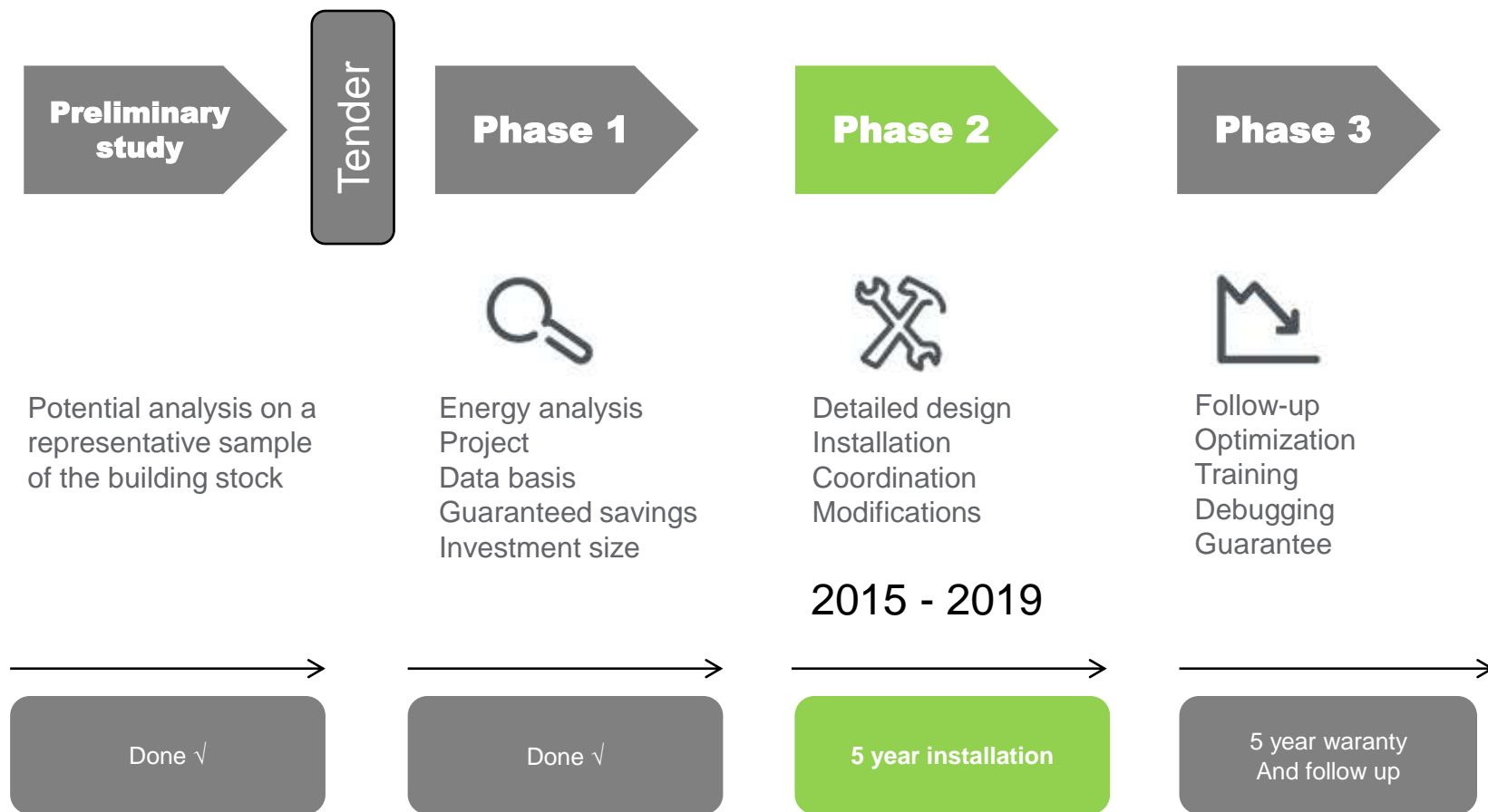
Performed works in 2015 for 3.3 mill. € is:

Plum- ming	Heating	Venti- lation	CTS managemen t	Diverse	Building envelop + tec. isolation	Lighting	Wate r	Other initiative s
9%	1%	27%	21%	1%	9%	19%	1%	11%

Process – status



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Affected property

The property includes

- Schools, sports, kindergarten, library etc.

	Capital investment	Affected property	And others
2015	3.3 mill. €	4	26 traffic signals
			3000 computers
2016	3.3 mill. €	4	
2017	3.3 mill. €	11	
2018	3.3 mill. €	8	
2019	3.3 mill. €	8	
Total	17 mill. €	39	2 projects

Benefits



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Local business and contractors

- The design, procurement, operation and delivery (Phase 2)
- Schneider Electric has own production of CTS – 10 % of the contract
- Schneider Electric offers
- Trade contracts
- Local contractors make offer on equal terms
- Handling of social dumping and chain liability are included in the contract



Contributions in the cooperation

Turnkey contractor's (SE)	Developer's (HM)
Be available for clients with key resources throughout the project	Ensure adequate resources, so it is possible to comply with agreed milestones
Respect the daily operation of the buildings and be at least possible inconvenience to users	Be clear about visions and aspirations for the project
Running a clear communication across all levels of the organization	Help to anchor the project in all layers of the organization of the municipality and stakeholders
Ensure the project's progress and compliance with agreed milestones	Helping to minimize risks throughout the project by project review



Conflict management

Mismatch

- Problems arise locally must be resolved within 24 hours

Personalization

- If not - move the problems to the "work committee"

The problem grows

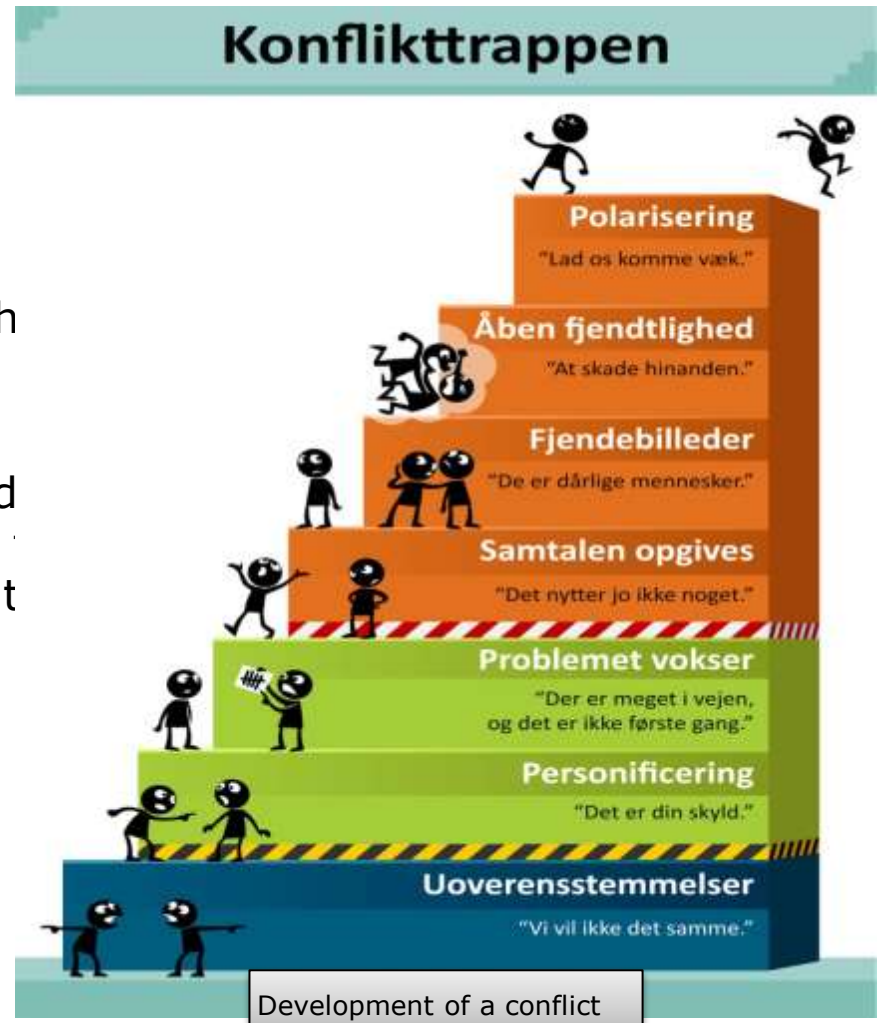
- If not the "work committee" find solution within 48 hours - move problem to the "steering committee"

The conversation is abandoned

- If not there in the "steering committee" is a solution -

Enemy images

- Judicial body





Risk management

Risk-issues

Risk topics broken down by probability and consequences

Economy

Average economic risk based on the probability and average consequence

Risikomatrix: ESCO Herlev 2015-2019					
Risiko-emner i projektet fordelt efter sandsynlighed og konsekvens, for i alt 24 emner					
Næsten sikkert	1	1			
Sandsynligt		1		1	
Muligt	8	5		1	
Sjældent		3			
Usandsynligt	3				
	Ubetydeligt	Mindre	Moderat	Større	Kritisk
Gennemsnitlig økonomisk risiko ud fra gennemsnitlig sandsynlighed og gennemsnitlig konsekvens på i alt 22,7 mio. kr.					
Næsten sikkert	0,5	2,0			
Sandsynligt		1,3		7,8	
Muligt	1,5	3,8		4,7	
Sjældent		1,1			
Usandsynligt	0,1				
	Ubetydeligt	Mindre	Moderat	Større	Kritisk



Phase 3 - Training and education

Education and training in connection with PPP will raise the competence level of the overall operating organization in Herlev Municipality, for the benefit of a prospective energy efficient operation of the technical installations.

Schneider Electric, in collaboration with Herlev Municipality selected two basic levels of education, as required different levels of competence for the operational technical staff, depending on their duties and responsibilities.

Niveau A	Niveau B
Operating Officers	Technical Support
Consists of the central operating and maintenance team group in Herlev Properties responsible for the operation of the buildings. This group trained extensively, so they can provide support and assistance to the other operating agency.	Consists of people that support the operators in the daily operation of the buildings. This group trained to monitor the operating parameters, general inspection and maintenance as per the instructions under the savings guarantee.



Phase 3

Whats in operate/ service/ warranty period ?

- Warranty period in 5 years after delivery
- Monitoring of energy use and savings
- Negotiations about changes and their impacts
- Starting the repayment of loans
- Possible execution of guarantees
- User behavior
- After the warranty period continues repayments for 15 more years

Additional value



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Benefits

- Increased efficiency and productivity - over 50 % on first measurements of traffic signal
- Early involvement of the contractor and a joint creation of project implementation in the main and turnkey contracts
- Good working spirit
- A nice working atmosphere
- Optimal conditions for early and good cooperation between all the parties involved
- Increased efficiency and productivity
- A basic cooperation based on trust

Additional value



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Benefits

- Allowing a common risk analysis, assessment and management
- Ongoing workshops with all involved parties (start, intermediate and end)
- Basic understanding with goals, success criteria, rules for the cooperation by all parties
- Open economy
- Being able to handle and resolve conflicts constructively

PPP – thank you



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Questions?