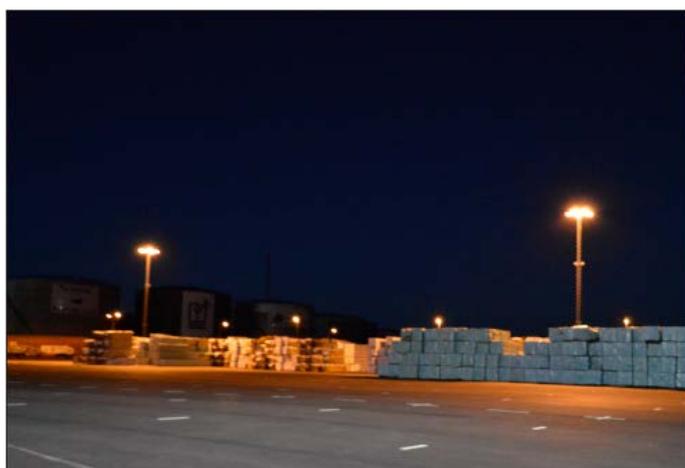




# Energy efficient harbour lighting

Oskarshamn Hamn, Sweden

- Energy efficient lighting saves kWh and CO2



### Conventional tender

- 4x5x1000W sodium
- 4200 operational hours
- 84 MWh/year

### GPP tender

- Energy efficient lighting, LED

### Results

4x6x400W LED  
 40 MWh/year  
 53% energy savings,  
 approx. 44 MWh

## Introduction to case

### 1.1 PITCH-TALK – SUMMARY

The work was triggered by a need of better lighting when an extensive harbor cleanup project was initiated. New lights had to be installed and Oskarshamn Hamn decided to procure energy efficient LED street light, and also replace old less efficient lighting.

### 1.3 CASE CONTENT AND CASE ISSUE

There was a major renovating work carried out and additional lighting had to be installed and some old light exchanged, in the harbor of Oskarshamn.

### 1.4 SOLUTIONS APPLIED

Oskarshamn Hamn used the contract for the harbor renovation to also refurbish the lights, and suborder the luminaries from a frame work agreement. To bundle projects and use framework agreements saves time and money. For many streetlight refurbishment projects this is a common way to handle the procurement of the fixtures and luminaires.

## Contract tendered

The project includes the replacement of mast luminaries and add additional lighting on a harbor area. The work was carried out within an existing framework contract for renovation of the harbor and the luminaries were sub ordered from a framework contract. For many lighting refurbishment projects in our region is this very a common way to handle this kind of projects.

- The total contract for luminaries was 800 000 SEK ≈ 84 000 € (VAT excl.).

## Procurement objectives

- To replace the old lighting system in the loading area and a large warehouse with new LED lighting
- To save costs through reduced energy consumption and reduced maintenance costs
- Add additional lighting on the harbor for improve safety and accessibility

## Procurement approach

During the task force intervention in the PRIMES projects both consultants, suppliers and other municipalities have clearly pointed out the importance of coordinating

lighting renovation project with other renovations project. Oskarshamn Hamn bundled the renovation project with a streetlight project and saved time, money and got an energy efficient lighting solution.

Oskarshamn Hamn wanted to have a lighting installation that contributes to a safe work environment and enables extended usage of the loading area for the cleanup project.

- Subject matter; replacement of lighting luminaries and add additional lighting on the harbor.
- Funding: the municipalities own finances
- The chosen luminaires were the ones that correspond to the requirements of energy efficiency, no glare and uniform illumination based on height and distance between the poles as well as easy maintenance and with customized optics for the area to be illuminated. And the luminaries that were installed are
- ZinHai MZ LED 400 W and LumoLumen Polaris HB



## Criteria development

Oskarshamn Hamn (harbor) has in a previous stage procured a contract with Oskarshamn Energy as a service supplier on the harbor. Oskarshamn Hamn has also a previous procured wholesale contracts with Ahlsells for luminaries. Within this wholesale contract one of Ahlsells subcontract for supply of luminaires is Energisystem who delivered the luminaries for this project. Before making the decision Oskarshamn Hamn made tests with several different luminaries from several different of Ahsllells subcontractors not only Energisystem. With basis from the tests, their own internal competence and successful references from the harbors in Gothenburg and Norrköping choices for the best luminaries were made.

The final decision of luminaries that were suborder from the frameworkcontract was based on the technology that fit in to requirement within the field of energy efficient lamps, LED. The specifications were developed by the municipality's own expertise with support from the TFI in PRIMES.

## Results

The old installation had total installed electric capacity of 20 kW and total operational hours of 4200 which results in a yearly energy consumption of 84 MWh/Year. The new system has total installed electric capacity of 9,6 kW total operational hours 4200h which results in 40 MWh/Year. Energy saving per year: 44 MWh.

The CO<sub>2</sub> emissions and reduction<sup>1</sup> is calculated on the Swedish energy mix 20 g/kWh.

	Investment volume (€)	Energy savings (kWh/year)	CO <sub>2</sub> reduction (tCO <sub>2e</sub> /year)	Payback time (€)
	84 000€	44 MWh/year	0,88	N
<b>Total</b>	<b>84 000 €</b>	<b>44 kWh/year</b>	<b>0,88</b>	<b>N</b>

### Other results

- The municipalities own experts has gained new knowledge
- The additional lighting on the harbor improved safety and accessibility

## Lessons learned

- To invest in new energy efficient lighting is positive for the climate, and the company financials.
- To bundle several lighting projects saves money and time.

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<sup>1</sup> Of the Swedish carbon emissions (2013) were approximately 2.2 million tons from generated the electricity usage. This means that emissions per kWh was as low as 15 g / kWh, a figure which historically was on average 20 g / kWh. This compared with emissions from the Nordic electricity production amounts to about 100 grams of CO<sub>2</sub> / kWh and emissions from European electricity production amounts to about 450 grams of CO<sub>2</sub> / kWh.

- This case study is relevant for Energy suppliers, Maintenance contractors and municipalities. Managers of harbors and similar logistic areas.
- The lighting in harbors is often placed on very high poles, why LED with low or no need of maintenance is very suitable.

## Contact

Christel Liljegren, Deputy Managing Director, The Energy Agency for Southeast Sweden

**Phone:** +46 (0) 706-208 308. **Email:** [christel.liljegren@energikontorsydost.se](mailto:christel.liljegren@energikontorsydost.se)



## About PRIMES

Across six countries in Europe; Denmark, Sweden, Latvia, Croatia, France and Italy, PRIMES project seeks to help municipalities overcome barriers in GPP processes, many of which lack capacity and knowledge.

PRIMES aims to develop basic skills and provide hands-on support for public purchasing organisations in order to overcome barriers and implement Green Public Purchasing. This will consequently result in energy savings and CO<sub>2</sub> reductions.– [www.primes-eu.net](http://www.primes-eu.net)

## About GPP 2020



GPP 2020 aims to mainstream low-carbon procurement across Europe in support of the EU's goals to achieve a 20% reduction in greenhouse gas emissions, a 20% increase in the share of renewable energy and a 20% increase in energy efficiency by 2020.

To this end, GPP 2020 will implement more than 100 low-carbon tenders, which will directly result in substantial CO<sub>2</sub> savings. Moreover, GPP 2020 is running a capacity building programme that includes trainings and exchange. – [www.gpp2020.eu](http://www.gpp2020.eu)



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