

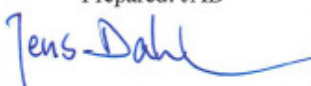
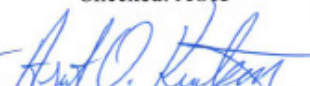



Uglund Marine Services AS

Environmental Report

2016

File ref. 080.00

Prepared: JAD 	Checked: AOK 	Approved: ØB 
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5 ENVIRONMENT

5.1 Vessels

5.1.1 Oil spills

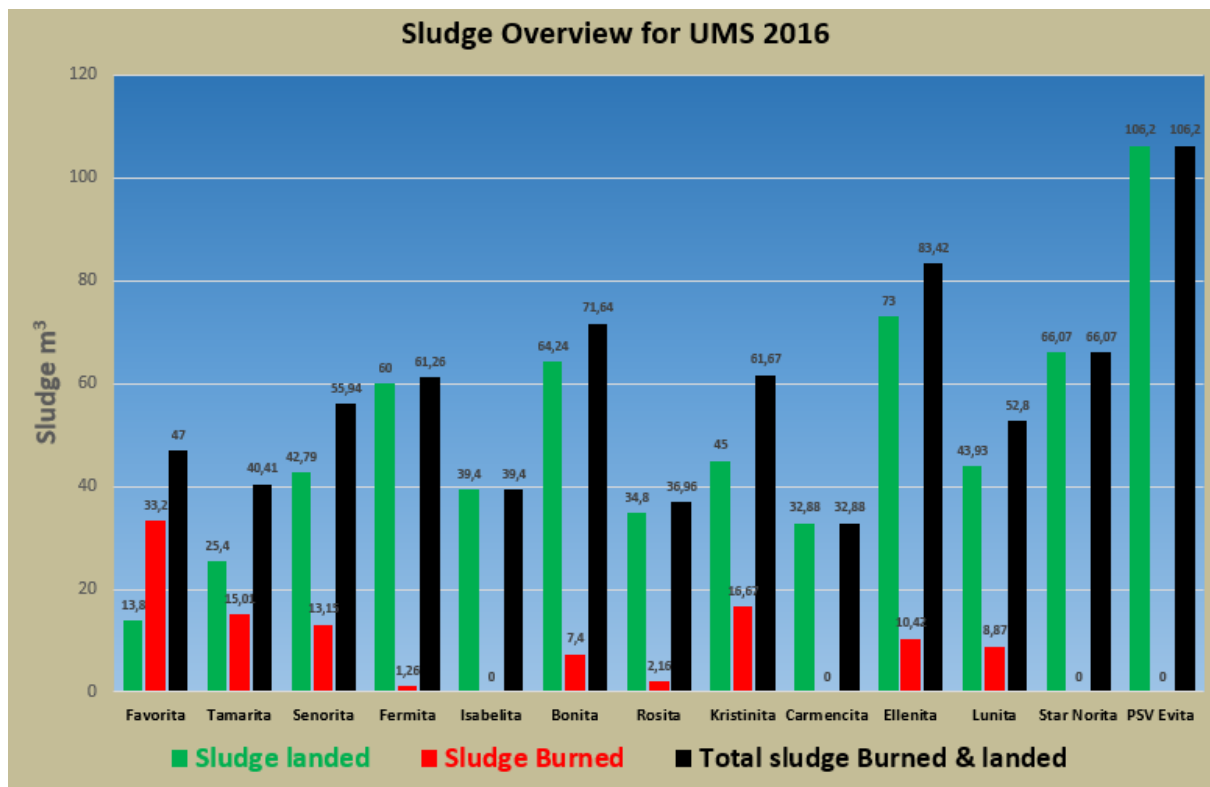
One oil spill(4ltr) reported during 2016:

- Carmencita spilled 4 ltr of stern tube oil (eco-friendly) in Portland, Oregon.

5.1.2 Environmental programs

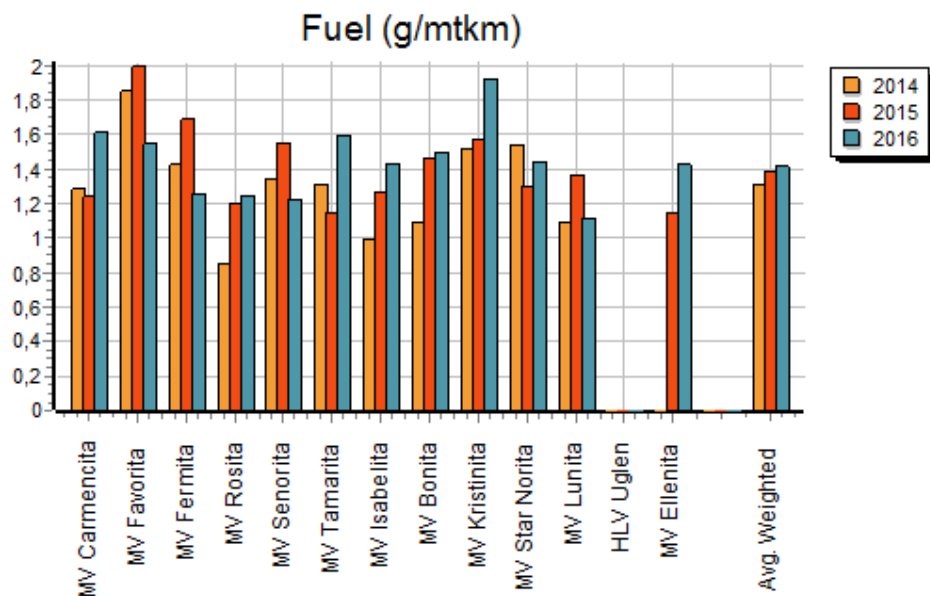
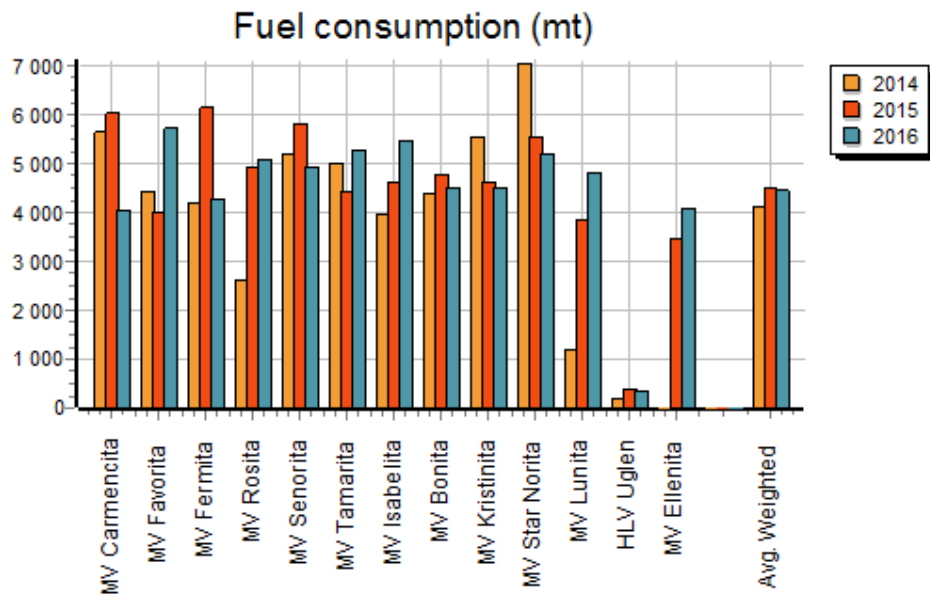
1. Monitoring of sludge incinerated on-board.

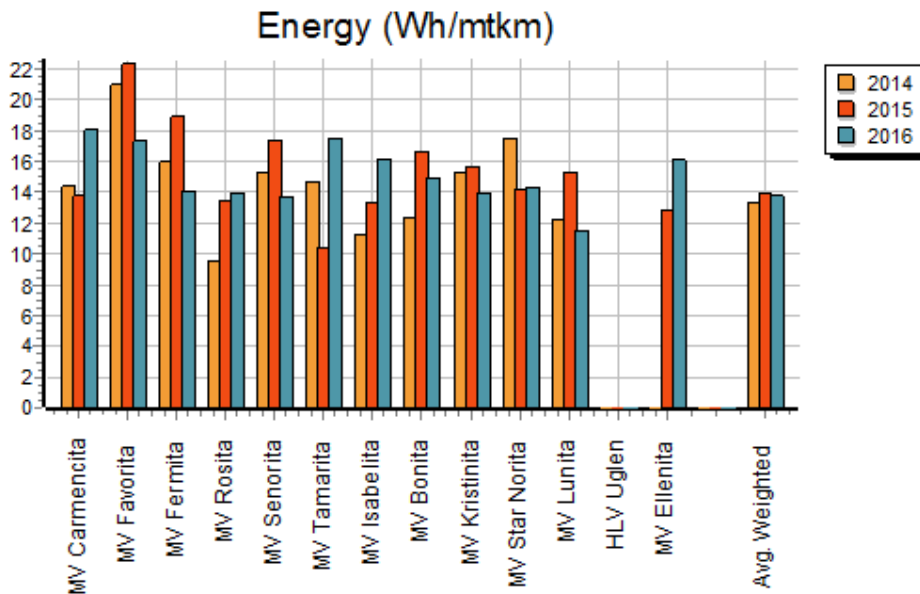
The 2016 target was set to reduce the amount of Sludge incinerated by 5% compared to 2015. The target has been met with good margin, with 39,9% reduction in sludge incinerated on board during 2016.



5.1.3 Consumption monitoring – Bulk and HLV.

Fuel oil has been monitored during year 2016, with results as below:



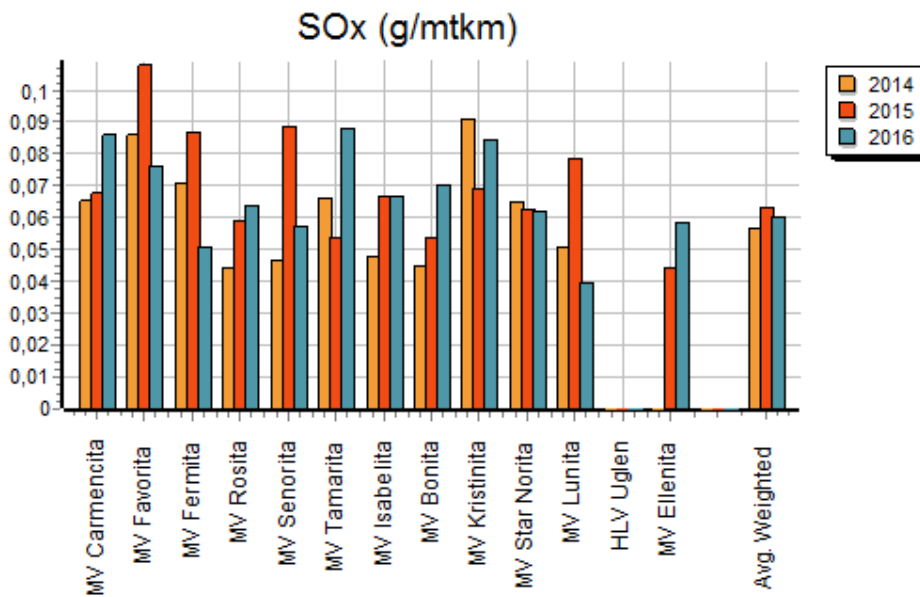


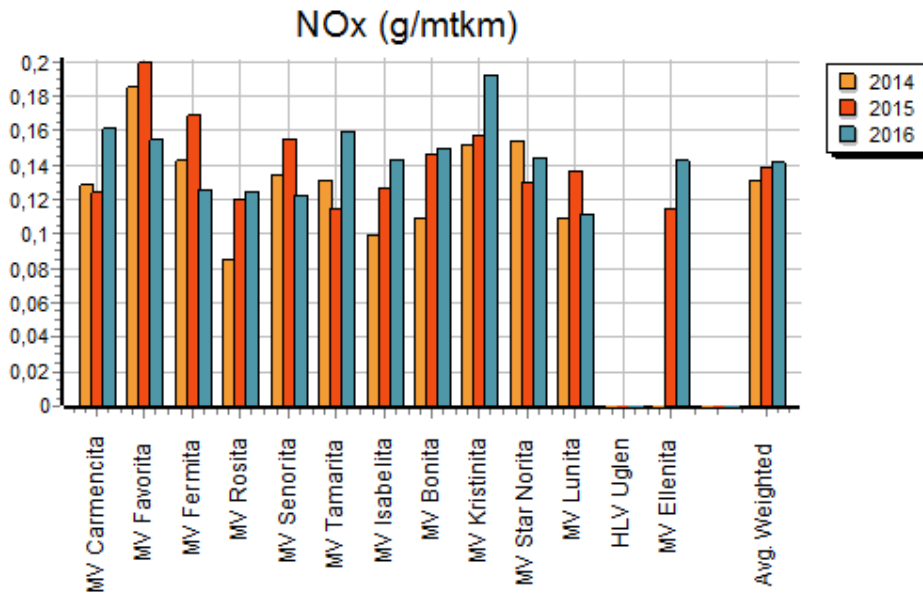
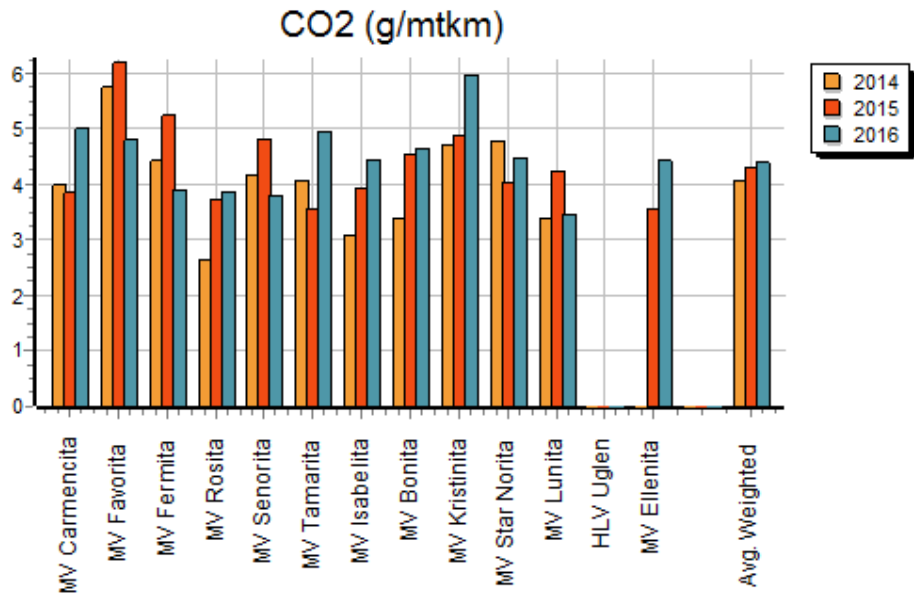
The specific energy consumption from our vessels compared with other means of transport is shown in the table below.

Energy Use	UMS vessels 2013 / 2014 / 2015 / 2016	Rail - Electric	Rail - Diesel	Heavy Truck	Boeing 747-400
Wh/tonnekm	15,0 / 14,0 / 12,9 / 13,8	43	67	180	2000

5.1.4 Emission monitoring – Bulk.

PSV and Uglen are excluded due to the nature of cargo versus distance sailed.
(Due to difficulties with the table format only year 2014 and 2015 are included)



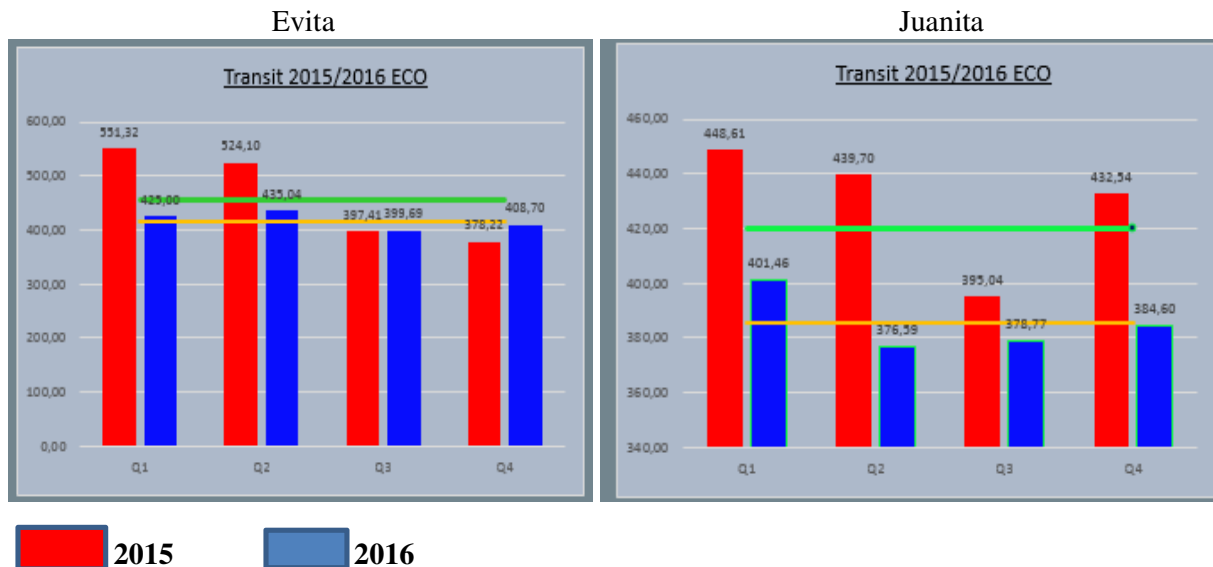


The air emissions resulting from combustion and burning of fuel oil from our vessels compared with other transportation means is illustrated below.

Emissions (g/tonnekm)	UMS vessels 2013 / 2014 / 2015 / 2016	Rail - Electric	Rail - Diesel	Heavy Truck	Boeing 747-400
CO ₂	4,19 / 4,29 / 4,24 / 4,45	18	17	50	552
SO _x	0,070 / 0,059 / 0,066 / 0,060	0.01	0.00005	0.00006	0.17
NO _x	0,135 / 0,138 / 0,14 / 0,14	0.044	0.35	0.31	5.69

5.1.5 Consumption monitoring – PSV

Fuel (MGO/DO??) consumption for PSV has been monitored during 2016 and the target for fuel consumption in Eco Transit was set to 2 % from 2015 figures as follows (kg/hrs):



Green line: Transit ECO mode fuel reduction target
 Brown line: Transit ECO mode fuel reduction actual figures

Average reduction of fuel in Transit mode for PSV 2016: 10,05 %

5.2 Office

The office operation consumes energy for heating, lighting and cooling purposes in addition to other office equipment (office machines/computers etc.). The consumed energy is virtually only electric power. An oil-fired boiler is in place as backup, and tested at regular intervals for contingency purposes. The raw materials consumed are mainly paper and tap water. Office equipment and utensils contribute to a lesser degree.

5.2.1 Environmental Programs

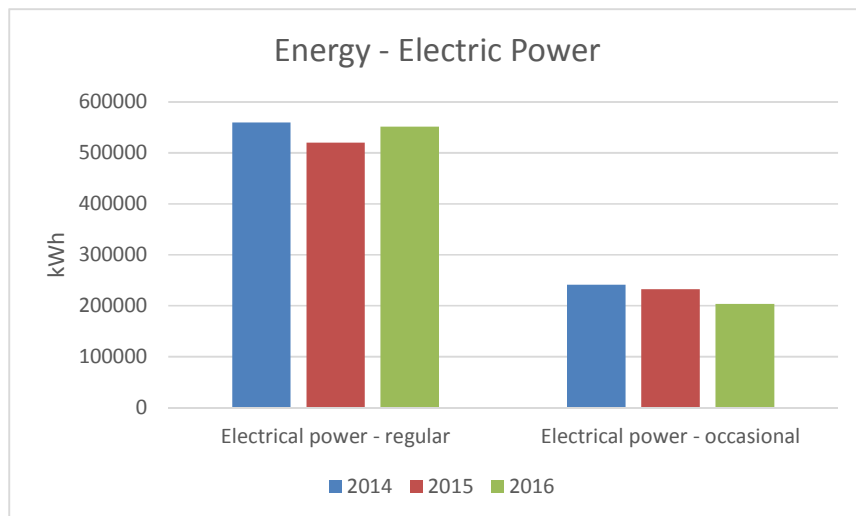
Following environmental programs have been oncoming during 2016:

1. Electronic Board portal on Ipad. This initiative was launched in 2015 and tested with good results. This will continue in 2016-2017 and will reduce the consumption of paper.
2. Heat exchanger in the server room. The plan was to recover the heat generated by servers, allowing us to use this to heat the office building. This was scheduled to be completed by 2016, but is postponed until further notice.
3. Composting of food waste. Today we have good measures to reduce food waste from the canteen, but there will always be some waste. Partnership with Ugländ Gård was attempted for composting food waste. This was not successful, and the program was canceled.

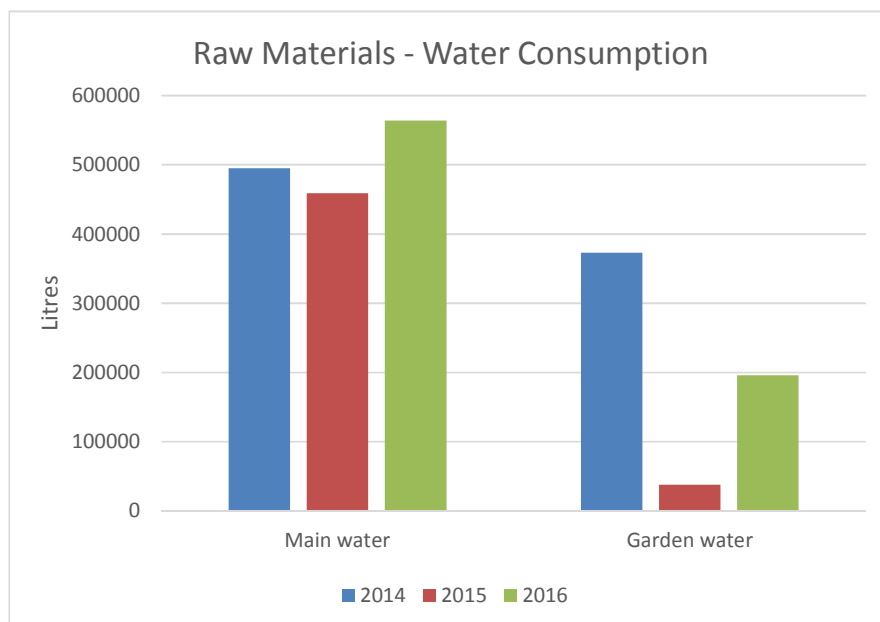
5.2.2 Consumption and Emission Monitoring

The office operation consumes energy for heating, lighting and cooling purposes in addition to other office equipment (office machines/computers etc.). The consumed energy is mainly electric power. An oil-fired boiler is in place as backup, and tested at regular intervals for contingency purposes. During 2015 an emergency diesel generator has been installed and testing continued into 2016. Testing at regular intervals to maintain the required power contingency security will consume diesel and contribute to emissions. Consumed raw materials are mainly paper and tap water. Office equipment and utensils contribute to a lesser degree.

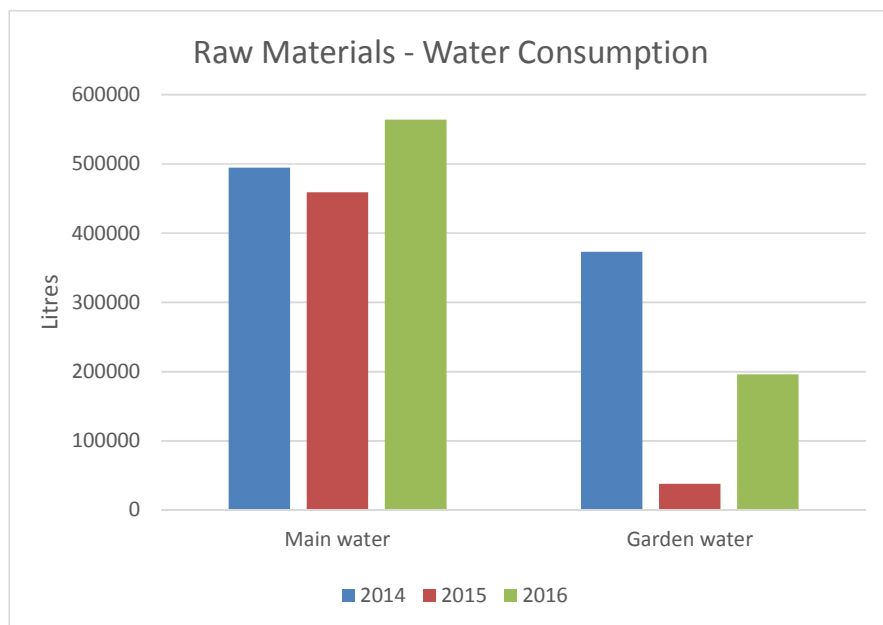
Achieved 2014 - 2016:



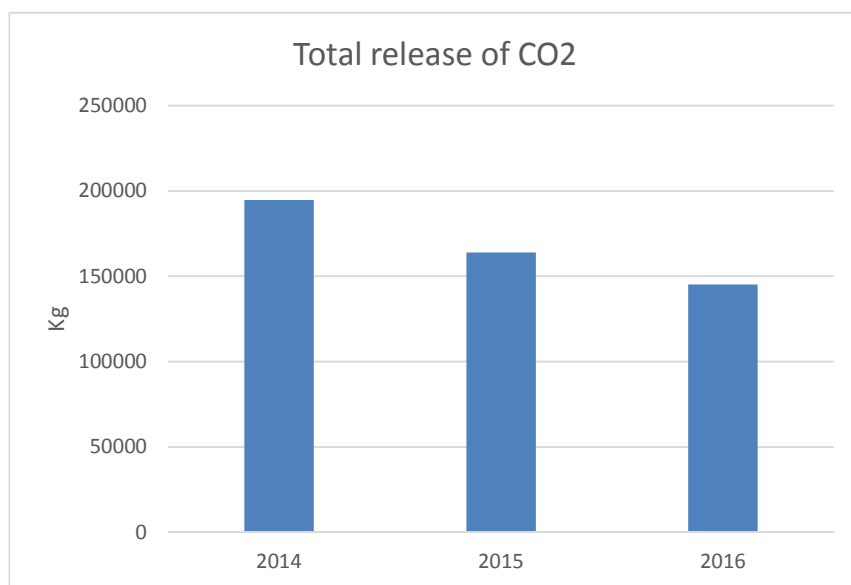
Total electric power consumption 2014 increased by 3,6 % from 2013. This primarily caused by NYMO staff using half of the third floor in the office building in 2014 (+13 % additional office area). In 2015, the NYMO staff no longer used the building resulting in reduced electric power consumption for 2015. In 2016, the situation is much like 2014, as NYMO staff (50 persons) are back in the office building. This has resulted in an electric power consumption increase by 6 % from 2015-2016. This is slightly more than in 2014 but the number of NYMO staff has increased in comparison, explaining at least in part the increased power consumption.



The usage of printing/writing paper, and magazines and newspaper decreased from 2015-2016. Work to reduce paper consumption continues, and encourage reading magazines and newspapers electronically together with the first full year of electronic board papers is no paper/copies to the board members or management. The use of other paper (toilet paper) increased from 2015-2016, and NYMO staff is the explanation for this.



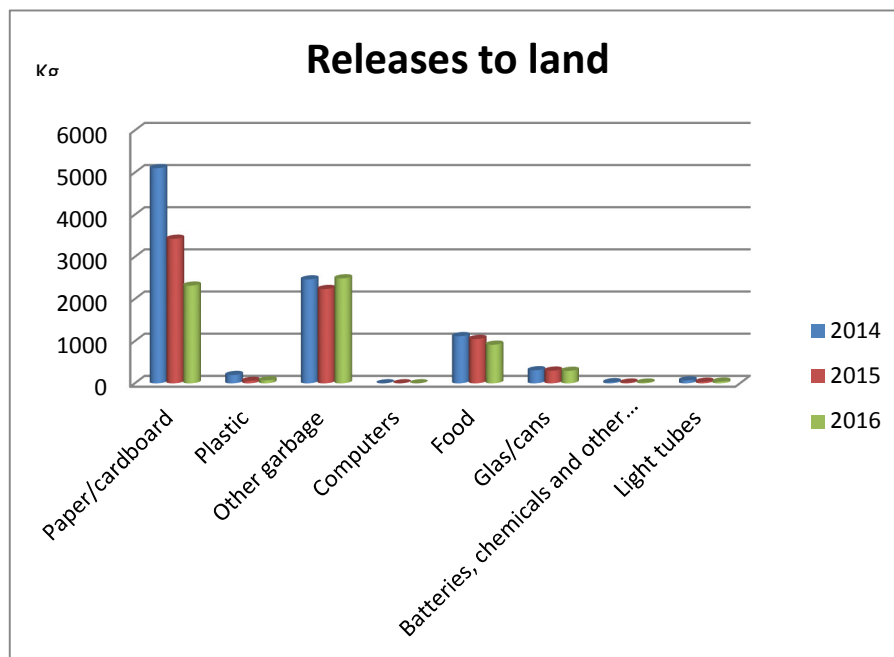
Water consumption has increased by 23 % in 2016 compared to 2015. In 2015, we had a wet summer, and this can be shown in the decrease in garden water used in 2015 by 7,3% compared to 2014. The use of main water increased from 2015-2016, and NYMO staff is the explanation for this.



Reporting of releases to air is limited to the effect of employees travel activities, where CO2 emissions are accounted for, and the use of the oil fired boiler. This boiler has only been test fired in the last years. During 2015 an emergency diesel generator has been installed and testing continued into 2016. Testing at regular intervals to maintain the required power contingency security will

consume diesel and contribute to emissions. 2017 will be the first full year of fuel/emission's measurement.

Office staff are recommended not to use air transport for business in the Oslo area and encouraged to use the public long distance bus and or train transportation. The total release of CO2 is decreased by 16 % in 2015 compared to 2014, and decreased by 11.5 % in 2016 compared to 2015. A significant portion of the total CO2 releases are caused by air flights linked to the overall activity of the company.



The total release to land from 2015 compared with 2014 has been reduced by about 23.3 %. We can see that the trend continues in 2016, and the total outgoing paper is strongly decreasing. Release to land caused by paper decrease by 33% from 2014-2015, and continues down 32,4% from 2015-2016. Other garbage has increased, and NYMO staff is the explanation for this.

5.3 Global Reporting Initiative (GRI-G4)

Category: Environmental

GRI – G4 EN3 - Energy Consumption within the Organization			
		2015	2016
a)	Total fuel consumption (11 ships) from non-renewable sources	1933 TJ	1795 TJ
b)	Total fuel consumption from renewable sources	None	None
c)	Total electricity consumption (office)	1.8 TJ	2,7 TJ
d)	Total energy sold	N/A	N/A
e)	Total energy consumption (ship and shore)	1934,8 TJ	1792,3 TJ
f)	Methodology: Continuous reporting of actual values		
g)	Source: DnV Services laboratory analysis of fuel energy content		

GRI – G4 EN6 - Reduction of Energy Consumption			
		2015	2016
a)	Reduction of energy consumption (14 vsl 2010 - 11vsl 2016)	835 TJ	973
b)	Type(s) of energy (ships/office)	Fuel oil/Electricity	Fuel oil/Electricity
c)	Baseline for calculation	2010-2015	2010-2016
d)	Methodology: Continuous reporting of actual values		

GRI – G4 EN8 – Total water withdrawal by source			
		2015	2016
a)	Total water withdrawn from municipal water supply	497 mT	742 mT
b)	Methodology: Continuous reporting of actual values		

*Increased total water is due to Nymo staff renting areas in UMS building

GRI – G4 EN23 – Total volume of Waste			
		2015	2016
a)	Total volume of hazardous and non-hazardous waste (ship)	701 m3	777m3
b)	Source: Disposed directly by the Organisation and actual values reported.		

GRI – G4 EN24 – Significant spills			
		2015	2016
a)	Total number and volume of significant spills	NIL	NIL
b)	Location and material	N/A	N/A
c)	Impact of significant spills	N/A	N/A