



Miljøvennlige fartøysoperasjoner innen forsyningsskip – erfaringer i Statoil

NCE Maritime CleanTech Stord 23 mars 2017

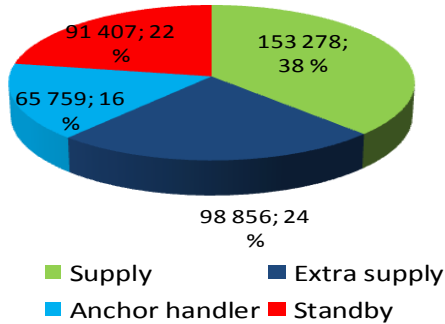
Historical/Current OSV portfolio for MOP

	2013-2014			2017	
	Term vessels	Spot vessels		Term vessels	Spot vessels
Supply (PSV)	27	5-10		19	5-12
Stand-by (ERRV)	17	0		10	0-2
Anchor handling (AHTS)	4	0-10		2	0-10
Guard duties	x	x		x	x
Total	48	5-20		31	5-20

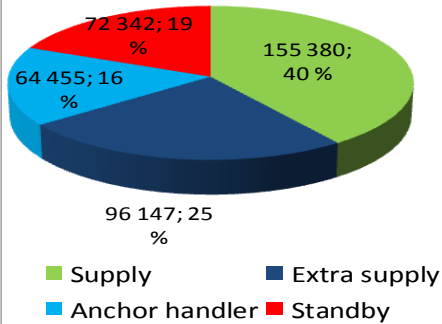


CO2 emission in tons

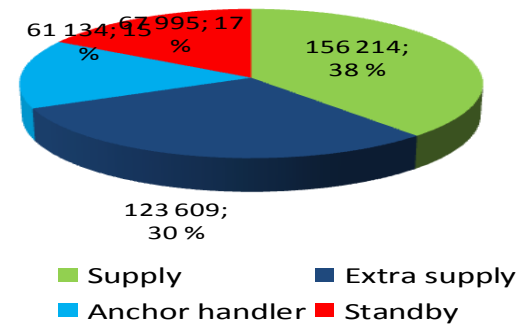
CO2 2011
409 300



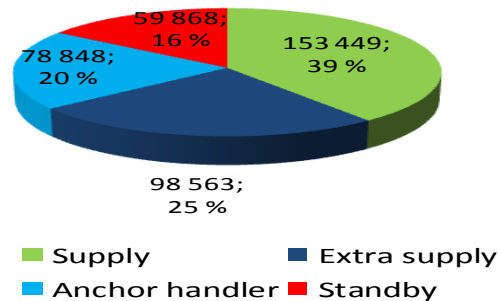
CO2 2012
388 323



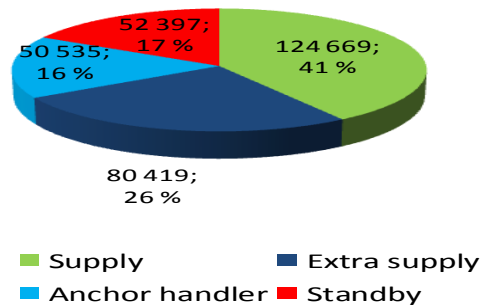
CO2 2013
408 953



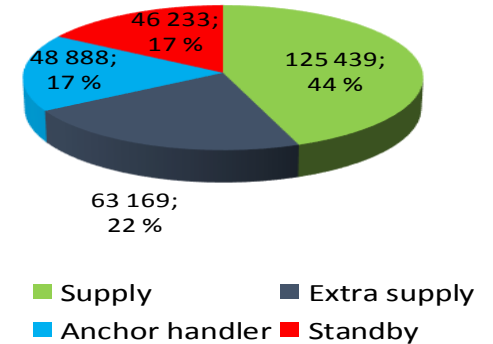
CO2 2014
390 728



CO2 2015
308 020



CO2 2016
283 728



Fuel efficiencies – what do we do

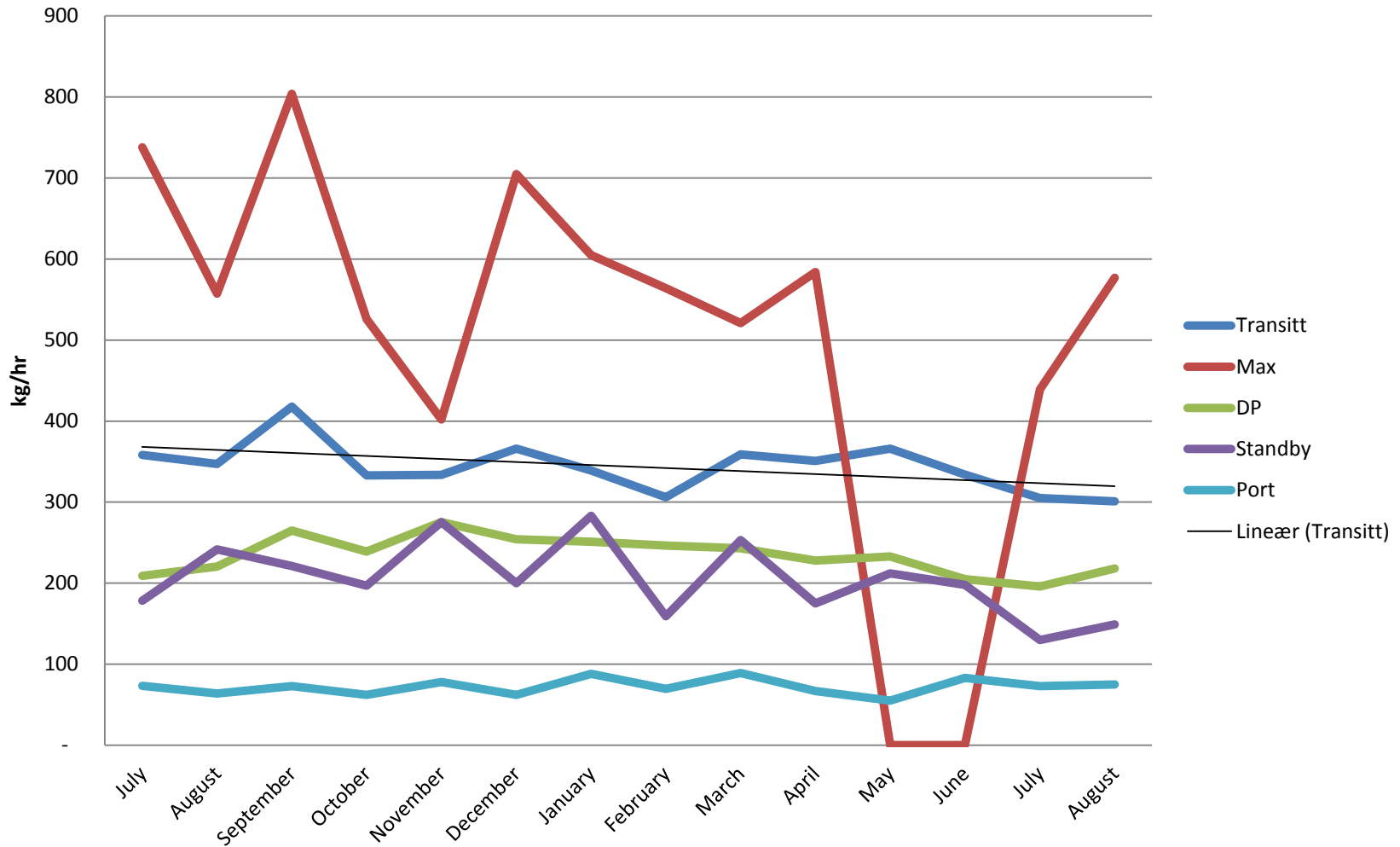
- Easy to operate in different modes
 - New technology, **battery** etc
 - System to help to operate, Ecometer
 - Led light
 - Onshore power supply
 - Ultra Sonic Anti Fouling System

 - **Propel polishing** / hull cleaning
 - More focus on fuel efficiencies anchorhandling brief
 - Monthly **reporting** on fuel, benchmarking
 - EEOP
 - **Planning** of Marine operations
 - **”Green speed”**
 - Optimal trim studie
- Focus on environmental vessel when enter into contracts
 - **Minimum requirements on long-term contract**
 - Get a “bonus” on short term contract
 - **Fuel consumptions is an evaluation criteria**
 - Fuel consumption, with test trial
 - **Environmental strategi in Logistic and Emergency**
 - **Fuel Incentives**
 - etc

=> Increase these activities in the coming years

Measuring of vessel

Vessel NN



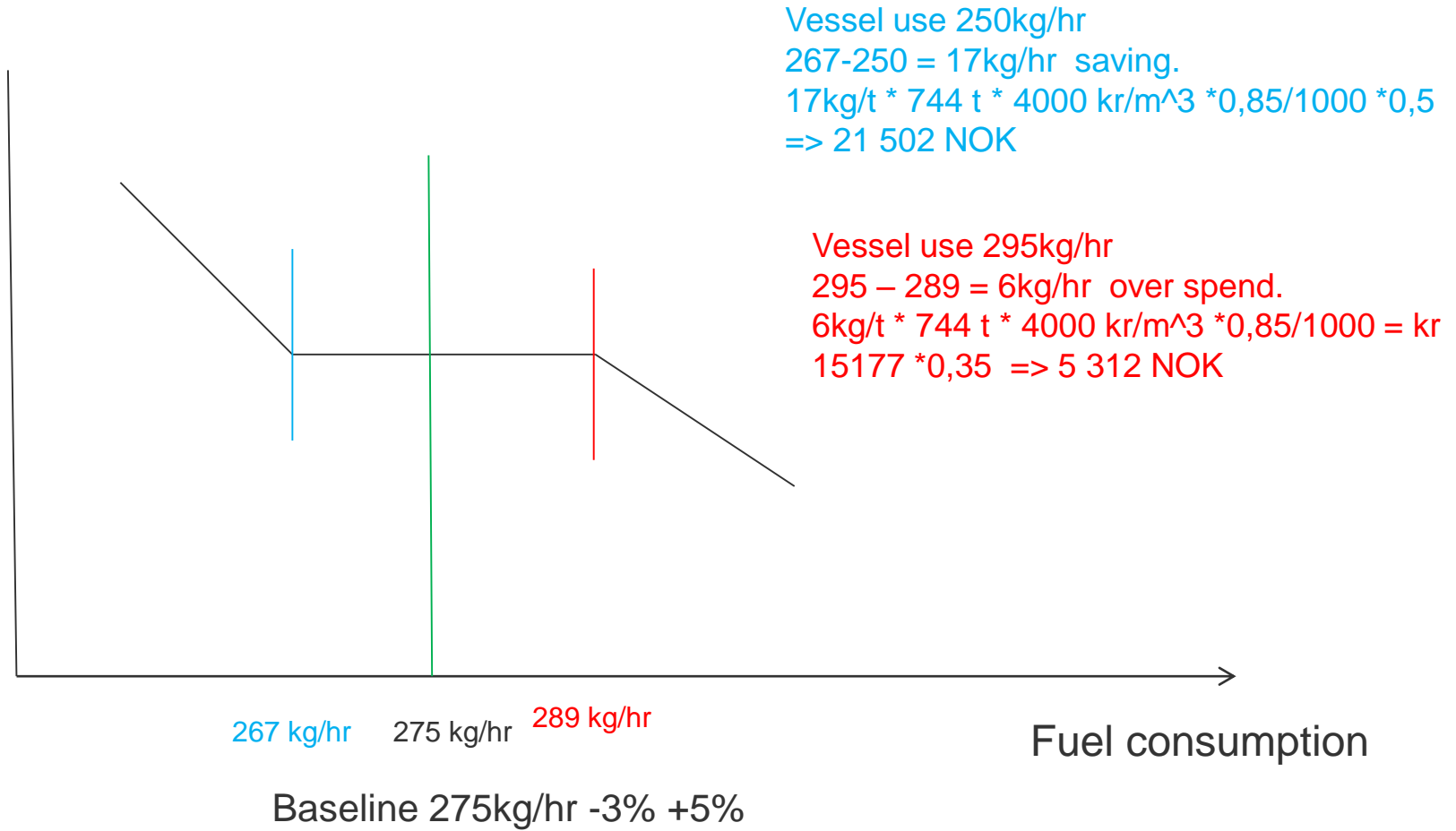
«Ligatabell»

Vessel	kg/hr			
	Jan	April	July	Oct
Average vessel	310	281	253	275
Vessel 1	282	257	265	251
Vessel 2	253	254	261	228
Vessel 3	303	279	242	238
Vessel 4	233	223	197	193
Vessel 5	279	256	225	224
Vessel 6	233	215	215	214
Vessel 7	219	232	197	198
Vessel 8	309	308	267	327
Vessel 9	348	354	264	290
Vessel 10	299	263		235
Vessel 11	283	263	232	223
Vessel 12	489	308		244
Vessel 13	336	317	310	294
Vessel 14	294	285	245	242
Vessel 15	367	312	289	325
Vessel 16	390	354	312	258
Vessel 17	298	317	260	202

Fuel incentive program/model

- This agreement shall not affect HSE and lower the quality of the service provided
- Use Statoil fuel agreement and monthly fuel price. Non risk for ship owner about future fuel price
- +/- 5% is within the target
- The distribution 50/50 on savings 65/35 on overuse
- No downside for ship owner in December to February
- Financial settlement 2 times a year
- Test period can be done if ship owner wants
- Agreement can be terminated by both parties with 2 months' written notice
- Positive for Vessels / ship owner regarding audit, SEEMP
- Ship owner shall be encouraged to do: trim, propel polishing, awareness of fuel consumption

Incentive model



New technology

- Agreement with ship owner to install battery on vessel done in renegotiations
 - More environmental operation, reduced fuel consumption and better economy

SKIP MED BATTERI

Batterier på full fart inn i skip

<http://www.tu.no/industri/2013/01/30/batterier-pa-full-fart-inn-i-skip>

– Tiden er tydeligvis moden.

<http://www.maritime.no/nyheter/offshorefartoy-med-batterilosning/>



Viking Queen har fått installert energilagringssystem. Foto: Eidesvik

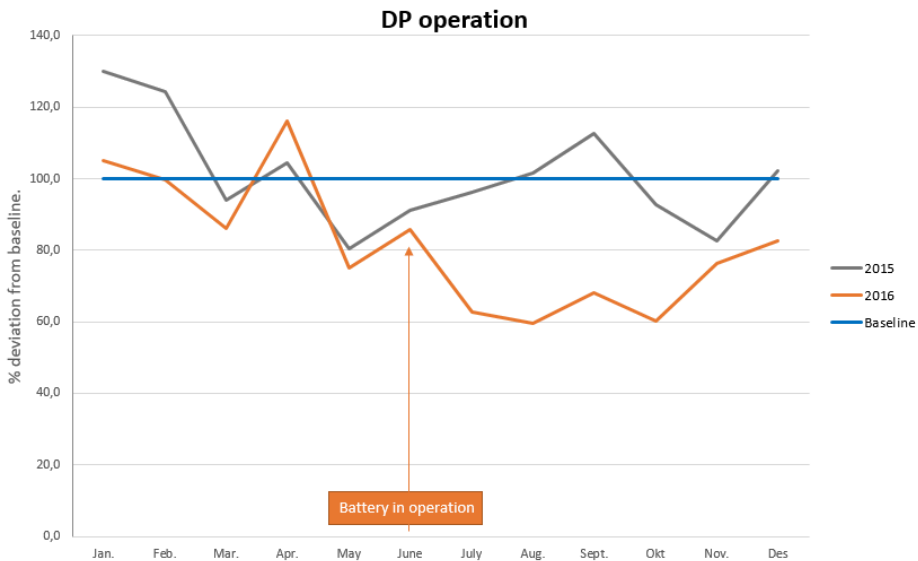
Trur det vil bli mange hybridskip med batteri

– Alle tenkjer no på korleis ein skal redusere både utslepp og kostnader, og svært mange tenkjer på hybridløyningar, seier Sindre Sætre i ABB.

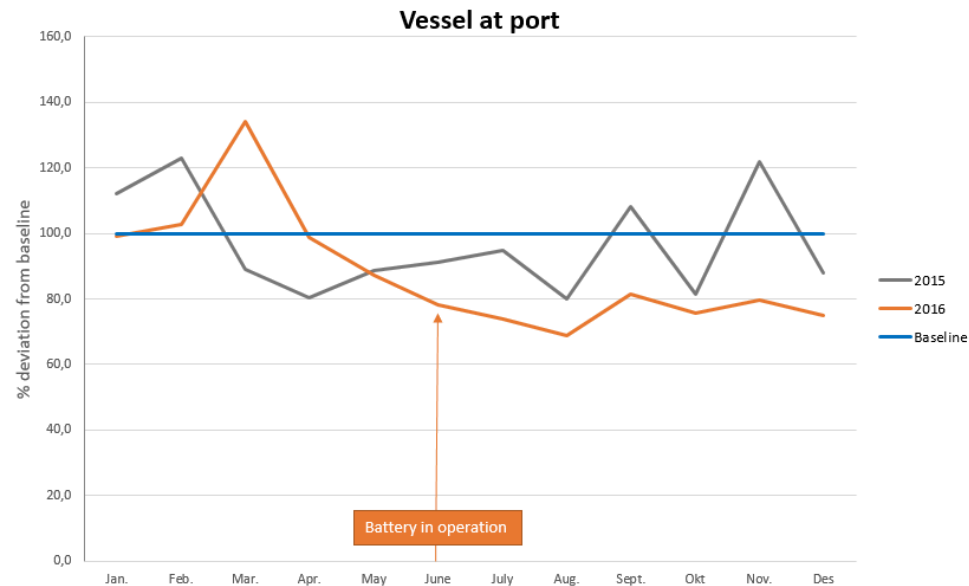
Dette offshorefartøyet tar batteriløsning

<http://www.maritime.no/marked/ttrur-det-vil-bli-mange-hybridskip-med-batteri/>

Viking Energy- Battery Power Notations



Positive trend
 Increased in Nov/Des due to weather, still under baseline



Positive trend
 Start / stop charge for 20min, battery on 45 min

Shore power



Cavotec connection Olympic Energy

- Requirement in tender in 2012 then the oil price hit us
- Low Voltage Shore Connection (LVSC) according to NEK IEC 80005-3 (Landstrøm). This do not have to be installed at vessel before the supply base has the facilities for Low Voltage Shore Connection. Notation Shore Power (DNVGL or equal)
- Florø install shore power 2017
- Mongstad, Vestbase, Dusavika and Polarbase to come in 2018
- Battery and shore power



There's never been a better
time for **good ideas**

Presentation title

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