Aquaculture Wind Wave Energy(AWWE)

	€ 1 12 kr	**Euro**		**Norwegian kr**	
Investment(AWWE)		3,00E+08	€	3,60E+09	kr
		300,0	million	3,6	mrd.
Repayment period		25	year		
Interest rate		6	%		
Repayment each year		1,20E+07	€		
		12,0	million		
Interest each year		9,00E+06	€		
		9,0	million		
CAPEX		2,10E+07	€		
		21,0	million		
OPEX		0,01	€ pr. kWh	0,12	kr/kWh
Power(AWWE)		6,00E+07	W	60	MW
Hour in a year		8760	houres		
Capacity factor		50	%		
Energy in a year		2,63E+11	Wh	2,63E+08	kWh
LCOE without aquaculture		0,09	€/kWh	1,08	kr/kWh
Rental income from aquaculture:					
Capcity		10000	tons	10000000	kg
Income from aquaculture each kg		0,8	€/kg	9,6	kr/kg
Rental income aquaculture each year		8,00E+06	€		
LCOE(aquaculture included)		**0,049**	€/kWh	**0,59**	kr/kWh

Calculation if this technology was used to build 500 MW at Utsira North, and the auction was won with € 0,14/kWh.				
Auction(PPA)	0,14	€/kWh	1,68	kr/kWh
Subsidies of kr 35 billion garanty the price	2,92E+09	€	3,50E+10	kr
	2,92	billion	35,0	mrd.
Power	5,00E+08	W	500,0	MW
Numbers of AWWE	8			
Energy each year	2,19E+09	kWh		
Profit each kWh	0,09	€/kWh		
Profit each year	198266666,7	€		
	198	million		
Investment	2,50E+09	€	3,00E+10	kr
	2,50	billion	30,0	mrd.
Profit in %	7,9	%		

China, Belgium and Sweden use green certifikates.				
Calculation if green sertificates are used for AWWE in Norway.				
Total energyproduction each year	1,50E+14	Wh	1,50E+11	kWh
Certificat fee	0,01	€/kWh	0,12	kr/kWh
Income from certificates each year	1,50E+09	€		

Green certificate each kWh new energy	0,03	€/kWh		0,36	kr/kWh
Support time of green certificates	15	years			
Total kWh to be supported		50000000000	kWh		
kWh to be supported each year	3333333333	kWh			
Capacity factor AWWE	50	%			
Hours in a year	8760	h			
Power to be supported each year	761035	kW		0,761	GW
Power each AWWE	60	MW		60000	kW
Number of AWWE to be built each year	13				
PPA	0,019	€/kWh		0,23	kr/kWh
30 GW finished	2064				

Menon Economics have analyzed the job marked if 30 GW makes a float wind industry in Norway, and predicts 30000 jobs.
NVE have analyzed the energy marked with 30 GW new renewable energy, and predicts an energy price at Nord Pool in Norway of € 0,04/kWh.
With a capazity of 13 AWWE each year Norwasy is finished building 30 GW by: 2064

Prediction of income from energy in Norway by 2064, when 30 GW is finished?					
Energy price in Norway	0,05	€/kWh		0,6	kr/kWh
Energy price in EU(average Nord Pool)	0,1	€/kWh		1,2	kr/kWh
Energy in Norway(total)	2,80E+14	Wh		280	TWh
				2,80E+11	kWh
Energy used in Norway by 2064	2,00E+14	Wh		200	TWh
				2,00E+11	kWh
Everage export each year	8,00E+13	Wh		80	TWh
				8,00E+10	kWh
Income from electricity in Norway	1,00E+10	€		1,20E+11	kr
	10,0	billion		120,0	mrd.
Income to Norway from export	8,00E+09	€		9,60E+10	kr
	8,0	billion		96,0	mrd.
Total income from energy(Norway by 2064)	18,0	billion €		216,0	mrd. kr

How will 30000 jobs in an float wind industry effect the capital expenditure in Norway?					
Taxes and fees from wages in Norway	60	%			
Average wages in Norway	50000	€		600000	kr
Capital expenditure building 13 AWWE	3,81E+09	€		4,57E+10	kr
each year.	3,8	billion		45,7	mrd.
Jobs in a float wind industry	3,00E+04	jobs			
Wages total in a float wind industry	1500000000,0	€		18000000000,0	kr
	1,5	billion		18	mrd.
Income from taxes and fees	900000000	€		10800000000	kr
	0,9	billion		10,8	mrd.
Real capital expenditure in float wind	2,91E+09	€		3,49E+10	kr
each year.	2,9	billion		34,9	mrd.