

Guide to the sheets in this workbook

Part 1 SPV Case	Inputs and Assumptions	Inputs from sheet	Inputs from sheet	Inputs from sheet
Inputs and Assumptions	<i>The sheet "Inputs and Assumptions" collects all micro- and macro-economic data on which the calculations are based.</i>	Greenhouse Invest	Fish Farm Invest	Energy System Invest
Part 2 SPV Case	Descriptions	Inputs from sheet	Inputs from sheet	Inputs from sheet
SPV PnL	<i>The sheet "SPV Case" describes a single typical project, which would be organised in a 'special purpose vehicle'. The contents of the project are a green house and a fish farm with commensurate energy supply.</i>	Inputs and Assumptions	Greenhouse Ops	Fish Farm Ops
Cap Table	<i>The sheet "Cap Table" shows the capitalisation of the SPV over the development and construction phases, and clarifies investment and ownership for owner categories.</i>	Phase II		
Cash Flows	<i>The "Cash Flows " sheet is the primary output sheet, showing, for the various owner and financier categories, the how money is invested and returned.</i>	SPV PnL		
Phase II	<i>The "Phase II" sheet details investment from the project participants in the development phase of the project. This investment is envisioned to be put into the SPV.</i>	Inputs and Assumptions		
Greenhouse Ops	<i>The sheet "Greenhouse Ops" shows a simplified P&L and Cash Flow for the greenhouse operations. The purpose of this is to demonstrate to investors that the greenhouse operations will generate sufficient returns to pay for the services from the SPV.</i>	Inputs and Assumptions	Greenhouse Invest	
Fish Farm Ops	<i>The sheet "Fish Farm Ops" shows a simplified P&L and Cash Flow for the fish farming operations. The purpose of this is to demonstrate to investors that the fish farming operations will generate sufficient returns to pay for the services from the SPV.</i>	Inputs and Assumptions	Fish Farm Invest	
Part 3 Investment calculations	Descriptions	Inputs from sheet		
Greenhouse Invest	<i>Details the investment calculations for the greenhouse, as well as input data for greenhouse operations</i>	Inputs and Assumptions		
Fish Farm Invest	<i>Details the investment calculations for the fish farm as well as input data for fish farm operations</i>	Inputs and Assumptions		
Energy System Invest	<i>Details the investment calculations for the energy system, both heat and power grid</i>	Inputs and Assumptions		

Base Case Project Parameters

Project scope

Greenhouse	15	ha
Fish farm	500	ton/year
Heat piping distance	500	m

Project financing

	Portion	Interest
Bank loan	60%	3,0%
Mezzanine	10%	6,0%
Equity yield requirement	30%	12,0%
Total	100%	6,00%

Installment term	20	years
Depreciation	20	years

WACC calculation

Weighted interest on loans	70%	3,43%
WACC	100%	6,00%
Interest rate for NPV		6,00%

Project roll-out

	3 years		
Project year	-2	-1	0
Investment portion	5%	5%	90%



Global Parameters

Economic assumptions

Inflation	0,00%
Interest	3,00%
Price of 1 €	9,213 SEK
Corporate tax on profit	22,0%

Energy markets

electricity price	230,325	SEK/MWh
electricity certificate price	190	SEK/MWh
annual price increase of electricity	0%	
annual price increase of heat	0%	
distribution cost electricity	5	SEK/MWh
grid cost development	0%	

Fees between parties

Rent greenhouse	258	SEK/m2
Rent fish farm	9%	of investment
Price of heat for greenhouse and fish farm	250	SEK/MWh
Management of SPVs	10	kSEK/month
Minimum ROI for investment	12,0%	ROI
Project Management Development Phase	1200	kSEK
Project Management Construction Phase	900	kSEK
Fee for procurement of capital financing	2,50%	of financing

Cost of distribution pipe per km 5000 kSEK

Energy market listings 2016-10-14

Nordic year 2019	21,48	€/MWh
Nordic year 2026	30,5	€/MWh
Electricity Certificate	135	kr/MWh
Regional price difference (estimate)		€/MWh
Profile cost estimate		€/MWh

Cash Flows by Financier

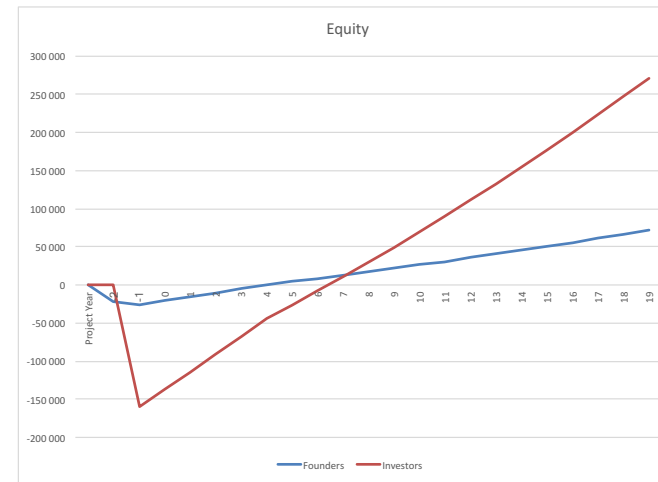
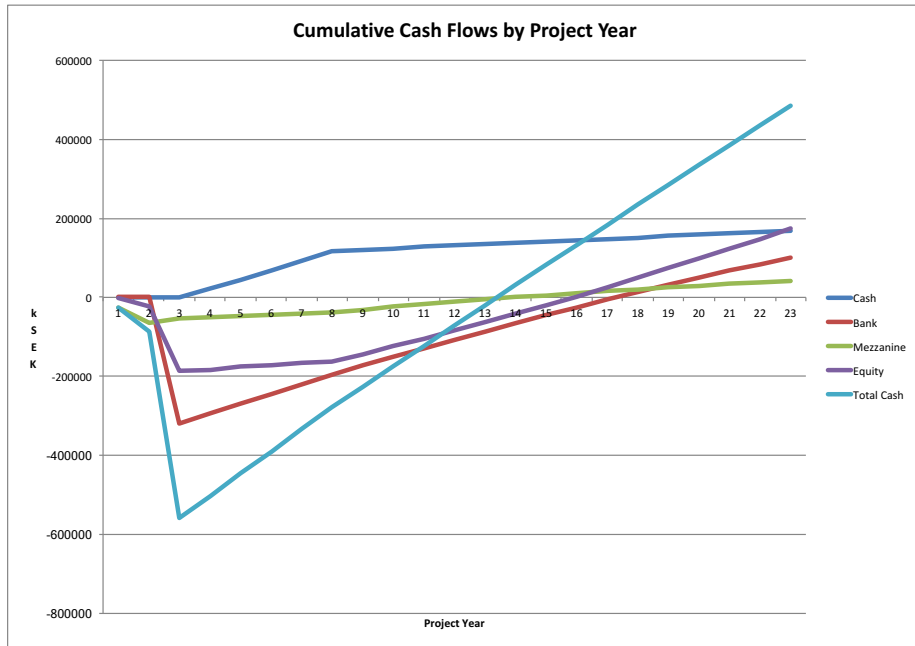
Project Year	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cash	0	0	0	24 149	20 779	24 149	24 149	24 149	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407	3 407
Bank			-319 343	25 547	25 068	24 589	24 110	23 631	23 152	22 673	22 194	21 715	21 236	20 757	20 278	19 799	19 320	18 841	18 362	17 883	17 404	16 925	16 446
Mezzanine	-25 717	-38 833	11 327	3 193	3 193	3 193	3 193	3 193	6 742	6 529	6 316	6 103	5 890	5 677	5 464	5 251	5 039	4 826	4 613	4 400	4 187	3 974	3 761
Equity	-100	-22 032	-163 663	3 370	7 114	4 117	4 491	4 865	18 649	19 189	19 729	20 268	20 808	21 348	21 887	22 427	22 967	23 507	24 046	24 586	25 126	25 665	26 205
Total cash flow	-25 817	-60 866	-471 679	56 260	56 155	56 049	55 944	55 839	51 951	51 798	51 646	51 494	51 342	51 190	51 037	50 885	50 733	50 581	50 428	50 276	50 124	49 972	49 820
Cash + equity	-100	-22 032	-163 663	27 519	27 893	28 267	28 640	29 014	22 057	22 596	23 136	23 676	24 215	24 755	25 295	25 834	26 374	26 914	27 454	27 993	28 533	29 073	29 612
Founders	-100	-22 032	-3 992	5 106	5 176	5 245	5 314	5 384	4 093	4 193	4 293	4 393	4 493	4 593	4 693	4 794	4 894	4 994	5 094	5 194	5 294	5 394	5 495
Investors			-159 671	22 413	22 717	23 022	23 326	23 630	17 964	18 404	18 843	19 283	19 722	20 162	20 601	21 041	21 480	21 920	22 360	22 799	23 239	23 678	24 118
Checksum	-100	-22 032	-163 663	27 519	27 893	28 267	28 640	29 014	22 057	22 596	23 136	23 676	24 215	24 755	25 295	25 834	26 374	26 914	27 454	27 993	28 533	29 073	29 612

Cumulative Cash Flows by Financier

Project Year	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cash		0	0	24 149	44 928	69 077	93 227	117 376	120 783	124 191	127 598	131 005	134 413	137 820	141 227	144 635	148 042	151 449	154 856	158 264	161 671	165 078	168 486
Bank			-319 343	-293 795	-268 727	-244 137	-220 027	-196 396	-173 243	-150 570	-128 376	-106 660	-85 424	-64 667	-44 389	-24 589	-5 269	13 572	31 934	49 817	67 222	84 147	100 593
Mezzanine	-25 717	-64 551	-53 224	-50 030	-46 837	-43 643	-40 450	-37 257	-30 515	-23 986	-17 670	-11 567	-5 677	0	5 464	10 716	15 754	20 580	25 193	29 592	33 779	37 753	41 515
Equity	-100	-22 132	-185 795	-182 425	-175 311	-171 194	-166 703	-161 838	-143 189	-124 000	-104 271	-84 003	-63 195	-41 847	-19 959	2 468	25 435	48 941	72 987	97 573	122 699	148 364	174 569
Total Cash	-25 817	-86 683	-558 362	-502 102	-445 947	-389 897	-333 953	-278 115	-226 164	-174 366	-122 719	-71 225	-19 883	31 306	82 343	133 229	183 962	234 542	284 971	335 247	385 371	435 343	485 162
Cash + equity	-100	-22 132	-185 795	-158 276	-130 383	-102 116	-73 476	-44 462	-22 406	191	23 327	47 002	71 218	95 973	121 268	147 102	173 476	200 390	227 844	255 837	284 370	313 443	343 055
Founders	-100	-22 132	-26 124	-21 018	-15 842	-10 597	-5 283	100	4 193	8 386	12 679	17 072	21 565	26 158	30 852	35 645	40 539	45 533	50 627	55 821	61 116	66 510	72 005
Investors	0	0	-159 671	-137 258	-114 541	-91 519	-68 193	-44 563	-26 599	-8 195	10 648	29 931	49 653	69 815	90 416	111 457	132 937	154 857	177 217	200 016	223 254	246 933	271 050
Checksum	-100	-22 132	-185 795	-158 276	-130 383	-102 116	-73 476	-44 462	-22 406	191	23 327	47 002	71 218	95 973	121 268	147 102	173 476	200 390	227 844	255 837	284 370	313 443	343 055

Returns

All equity	8,5%
Founders	12,9%
Investors	7,4%



Design and Development Stage Investment

Project Scale

Greenhouse	15 ha
Fish Farm	500 tons

Development and Design	Sum
Greenhouse	7 775
Fish Farm	3 500
Energy systems	2 354
Financing, legal and business structure	4 008
Project management	2 171
Other	675
Total	20 483

Project value at completion 22 032

RePro Food

Project Scale

Greenhouse	15 ha
Fish Farm	500 tons

Equity input by party	kSEK	%	Value
Findus Sverige Aktiebolag	380	3,24%	715
Bjuvs kommun	95	0,81%	179
Royal Pride Sweden	6 495	55,45%	12 217
Söderåsens Bioenergi	53	0,45%	99
Sveriges Lantbruksuniversitet	205	1,75%	386
Vegafish Bjuv	888	7,58%	1 670
Veolia Sverige AB	1 046	8,93%	1 968
WA3RM	2 551	21,78%	4 799
Total	11 712	100,00%	22 032

Development and Design	Sum	Equity	Subsidy	Other	Scope
Greenhouse	11 662	6 495	5 168		150%
Fish Farm	1 750	888	863		50%
Energy systems	1 766	1 046	719		75%
Financing, legal and business structure	4 008	2 551	2 549	-1 092	100%
Project management	2 171	380	380	1 412	100%
Other	675	353	323		100%
Total	22 032	11 712	10 000	320	

Fish Farm Operations PnL and Cash

Inputs to calculations

Size of fish farm (production volume)	500 tons
Depreciable operational investment	0 kSEK
Operational capital	60 000 kSEK
Discount factor WACC	6,0% %
Weighted average interest on loans	3,0% %
Weighted average term on loans	10 years
Loan's portion of total financing	50% %
Depreciation period (linear)	5 år
Average inflation index	1,000
Price development	1,00

Avkastning

IRR totalt kapital (ROI)	18,7% (obelånat projekt)
IRR eget kapital (ROE)	60,3%

Profit and Loss

kSEK

Operations year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	2 017	2 018	2 019	2 020	2 021	2 022	2 023	2 024	2 025	2 026	2 027	2 028	2 029	2 030	2 031	2 032	2 033	2 034	2 035	2 036	2 037	2 038	2 039
Revenue		0	15 625	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500
Operational costs		34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550
Rent (included in Ops Cost)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heat purchase																							
Net earnings (EBITDA)		-34 550	-18 925	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950
Depreciation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net income		-34 550	-18 925	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950
Interest		900	900	900	900	900	900	900	900	900	0	0	0	0	0	0	0	0	0	0	0	0	0
Income before tax		-35 450	-19 825	27 050	27 050	27 050	27 050	27 050	27 050	27 050	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950

Cash Flow Analysis

Cash in	60 000	60 000	15 625	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500	62 500
Cash out		32 450	32 450	32 450	32 450	32 450	32 450	32 450	32 450	32 450	31 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550	34 550
Cash flow (equity)		-30 000	27 550	-16 825	30 050	30 050	30 050	30 050	30 050	30 050	30 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950
Cash Flow (total capital)		-60 000	-34 550	-18 925	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950	27 950
Total Cash		60 000	25 450	6 525	34 475	62 425	90 375	118 325	146 275	174 225	202 175	230 125	258 075	286 025	313 975	341 925	369 875	397 825	425 775	453 725	481 675	509 625	537 575

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Greenhouse Investment Calculation

Summary			
	Area	Total price	Per m2
	m2	EUR	EUR/m2
TOTAL INVESTMENTS	69 465	16 646 680	240
Land	69 465	430 000	6,5 2,70%
Building	69 465	15 165 680	218,3 91,10%
Machine	69 465	1 051 000	15,6 6,19%

INTERNATIONAL INVESTMENTS			
	Area	Total price	Per m2 Category
	m2	EUR	EUR/m2
Buildings	69 465	15 165 680	218,3 Building
Greenhouse excluding double glass wall	69 465	4 247 500	61,0
Pack house (building including floor, excluding roof)	4 435	783 500	176,5
Total building	69 465	5 031 000	72,4
Screening	69 465	465 000	6,69 Building
Diol on greenhouse	69 465	465 000	6,69
Total screening	69 465	465 000	6,69
Acclimatization lighting	69 465	1 065 000	15,33 Building
Growthlight installation	69 465	1 065 000	15,33
Growthlight installation 8000 armature	69 465	1 640 000	23,61
Labour installing	69 465	46 800	0,67
Total acclimatization lighting	69 465	2 746 800	39,54
Heating and CO2 installation	69 465	2 145 000	30,88 Building
Heating installation	69 465	1 920 000	27,64
Transportation DAP to building site	69 465	123 000	1,77
Tagging works and rental of machine equipment	69 465	122 000	1,75
Total heating and CO2 installation	69 465	2 165 000	31,17
Energy systems	69 465	0	0,00
a	69 465	0	0,00
b	69 465	0	0,00
c	69 465	0	0,00
Total energy systems	69 465	0	0,00
Water systems	69 465	1 051 000	15,13 Building
Total installation	69 465	558 000	8,03
Hanging gutters	69 465	240 000	3,46
Greenhouses	69 465	140 000	2,02
Basin	69 465	23 500	0,34
Total water systems	69 465	1 051 000	15,13
Electrical investments	69 465	916 380	13,19 Building
Electrical installations inside the greenhouse	69 465	297 000	4,28
The greenhouse installation	69 465	197 000	2,84
Installation recirculation ventilators	69 465	103 400	1,49
Emergency generator delivery	69 465	53 000	0,76
Computer installation	69 465	265 980	3,84
Total electrical installations	69 465	916 380	13,19
IT systems	69 465	21 000	0,30 Machine
Labour registration	69 465	0	0,00
Sound installation	69 465	21 000	0,30
Total IT systems	69 465	21 000	0,30
Plant growing systems	69 465	90 000	1,30 Building
Grow gutter system complete	69 465	60 000	0,87
Crop wires	69 465	30 000	0,43
Dirt/floor cover	69 465	90 000	1,30
Total plant growing systems	69 465	90 000	1,30
Logistics systems	69 465	1 010 000	14,54 Machine
Internal transport system and harvest equipment	69 465	300 000	4,32
Tray machine	69 465	80 000	1,15
Lifts	69 465	150 000	2,16
Roof/washer	69 465	80 000	1,15
Various equipment	69 465	100 000	1,44
Packing lines	69 465	300 000	4,32
Total logistics systems	69 465	1 010 000	14,54
Construction labour	69 465	0	0,00 Building
Supervisor costs	69 465	0	0,00
Construction labour force	69 465	0	0,00
Construction machinery	69 465	0	0,00
Construction machinery rental	69 465	0	0,00
Total construction labour	69 465	0	0,00
Unforeseen	69 465	500 000	7,20 Building
Other unforeseen	69 465	500 000	7,20
Total unforeseen	69 465	500 000	7,20
SUBTOTAL INTERNATIONAL INVESTMENTS	69 465	13 946 680	200,8
LOCAL INVESTMENTS			
Ground works	69 465	1 150 000	16,56 Building
Purchase land	69 465	430 000	6,19
Excavation work	69 465	300 000	4,32
Road and parking lots	69 465	200 000	2,88
Concrete works (path and floors, loading dock)	69 465	200 000	2,88
Total ground works	69 465	1 150 000	16,56
Connections	69 465	450 000	6,48 Building
Infrastructure energy	69 465	300 000	4,32
Drains (work digging for pipes)	69 465	150 000	2,16
Total connections	69 465	450 000	6,48
Housing	69 465	270 000	3,89 Building
Cooling installation packhouse	69 465	70 000	1,01
Interior, lunch room/office/warehouse, etc.	69 465	200 000	2,88
Total housing	69 465	270 000	3,89
Construction labour	69 465	0	0,00 Building
Supervisor costs	69 465	0	0,00
Construction labour labour force	69 465	0	0,00
Construction machinery	69 465	0	0,00
Construction machinery rental	69 465	0	0,00
Total construction labour	69 465	0	0,00
Other	69 465	830 000	11,95 Building
License	69 465	70 000	1,01
Advice	69 465	60 000	0,87
Startup costs	69 465	60 000	0,87
Insurance and supervisor	69 465	100 000	1,44
Total other	69 465	830 000	11,95
SUBTOTAL LOCAL INVESTMENTS	69 465	2 700 000	38,87 Building
Taxes and duties	69 465	0	0,00
Import duties	69 465	0	0,00
Subtotal on taxes and duties	69 465	0	0,00
TOTAL INVESTMENTS	69 465	16 646 680	239,64

Basis of estimates

"JAGROK Sweden // Financial Feasibility v2.0"
For TIC

Greenhouse Operations

Financial structure	
Working capital during operation	1 330 000 €
Revenue	0
Square meters	69465 m2
Weighted average selling price/tomato (net)	1,75 €/kg
Yearly selling price increase	0%
Annual production	5 168 198

Costs

Heat consumption greenhouse, annual	2 523 MWh/ha
Electricity consumption	3 462 MWh/ha
Operations cost (not including rent and heat)	212 752 €/ha

Export Table, Scaled, ltr

Greenhouse Investment Summary

Greenhouse Investment Summary	
Land	430 000
Purchase land	8 952
Buildings	13 926
Ground works	8 952
Connections, heat	8 952
Greenhouse excluding double glass wall	8 952
Pack house (building including floor, excluding in	15 287
Screening	9 251
Lighting	54 645
Heating and CO2 installation	49 071
Water systems	19 244
Electrical	18 211
Building IT systems	418
Plant growing systems	1 780
Interior	5 371
License	1 393
Advice	1 284
Startup costs	11 917
Insurance and supervisor	1 989
Unforeseen	9 987
Total Buildings	302 127
Machinery	0
Logistics systems	20 083
Total Investment	331 172
Checksum	331 172

Energy and water consumption on a monthly basis

Area in production	Year	m2	January	February	March	April	May	June	July	August	September	October	November	December
Days in a month	365	Days	31	28	31	30	31	30	31	31	30	31	30	31
Gas consumption	2 110 116	m3	268 965	207 045	189 830	311 535	164 475	139 330	116 100	109 327	178 987	77 400	159 637	187 695
CO2 consumption	240 583	kg	0	0	0	0	13 386	55 132	67 323	0	0	126 793	0	0
Greenhouse heating	17 526	MWh	2 010	1 472	2 070	1 947	1 329	964	813	962	1 576	1 043	1 209	1 784
Electricity	24 172	850 kWh	4 715 661	4 258 659	4 348 032	117 689	21 036	20 537	22 886	24 490	19 765	1 915 704	4 013 494	4 896 397
Heat use per month	100%	Ratio	11,38%	10,64%	11,41%	11,11%	7,58%	5,30%	4,64%	5,49%	8,99%	5,94%	6,90%	10,18%

CO2 price 0,00 €/kg



Investment by asset type

Land	8 952
Buildings	302 127
Equipment	20 099
Total	311 172

Fish Farm Investment Calculation

Summary

TOTAL INVESTMENTS	Size	Total price	Per ton	Total Income	Per ton Tot Ops Cost	Per ton	Net annual income	Per ton	
	tons	kkkr	kkkr/ton	kkkr/year	kkkr/ton	kkkr/year	kkkr/ton	kkkr/ton	
	500	131 750	264	62 500	125	34 550	69	27 950	56
Land		895							

Investment mixed pike perch / trout

Investment cost	131 750	kSEK
Yearly operational costs	34 550	kSEK
Production	500	ton
Price at farm gate	125	kSEK/ton
Total income	62 500	kSEK
Net income yearly	27 950	kSEK
Time to first harvest	1,8	years
Operational investment	60 463	kSEK
Total facility area	15 000	m ²
Total energy need	2 575 600	kWh

Investment Pike Perch

Investment cost	131 200	kSEK
Yearly operational costs	34 550	kSEK
Production	500	ton
Price farm gate	125	kSEK/ton
Total income	62 500	kSEK
Net income yearly	27 950	kSEK
Time to first harvest	1,5	years
Operational investment	51 825	kSEK

5,1512 MWh/ton

Investment Rainbow Trout

Investment cost	132 300	kSEK
Yearly operational costs	34 550	kSEK
Production	500	ton
Price farm gate	125	kSEK/ton
Total income	62 500	kSEK
Net income yearly	27 950	kSEK
Time to first harvest	2,0	years
Operational investment	69 100	kSEK

Fish Farm

Heat consumption fish farm	7,7	MWh/ton		
Investment, total	#REF!	€/1000 tons	#REF!	kSEK
Fish Farm 1000 tonnes	8 000 000	€/1000 tons		

Energy System Investment Calculation

Summary			
	14 ha		
Heat	Size	Total price	Investment
	MWh	kr	kr/MWh
	21 000	20 531	0,978
	14 ha	with HP 3 MW	
Power grid connection	Size	Total price	Per ton
	MW	kr	kr/MW
	23	30 000	1 304

Calculation parameters

WACC	6%	
Depreciation	20	years
Capital cost	0,0872	
Electricity price at full tax	500	kr/MWh
Oil	750	kr/MWh
Pump efficiency	0,8	
Hours of operations for pumps	6000	timmar
Max power	4,7	MW
Average power	2,6	MW
Total delivery in MWh/år	21000	MWh
COP heat pump	5	
Length of DH pipe	500	m
Energy tax	292	kr/MWh
Energy tax energy intensive industry and greenhouses	5	kr/MWh
Electricity price at low tax	213	kr/MWh

Cost per meter of pipe 6454 SEK

Underlag till rapport för ReProFood i oktober 2016

Veolias kalkyler baseras på att restvärme kan tas från kylbassängen vid Isovers fabrik i Billesholm. Med de uppgifter som erhållits från Isover ska tillräcklig värmemängd ständigt finnas tillgänglig vid cirka 30°C.

Isover medger inte att vatten förs från bassängen. Detta betyder att en värmeväxlare uppförs i direkt närhet till bassängen där värme från bassängen överförs till värmepumpens system. En värmepumpinstallation byggs i en ny byggnad i Billesholm med en 4,2 MW's värmepump. Värmepumpen levererar drygt 60 gradigt vatten till ledningssystemet.

Ett ledningspar i stål med dimensionen DN200 förläggs i marken från Billesholm till den aktuella platsen för tomatodlingen vid Selleberga, Bjuv. Den totala längden på ledningsparet är 4700 m. Beträffande ledningen så har ett antal olika alternativ av vattentemperaturer, rörstorlekar och material (stål och plast) undersökts. Övan angivna data ger lägst kostnad.

Vid växthuset överförs den 60 gradiga värmen till växthusets system. Vid växthuset uppförs också en bak-up panna som används vid underhållsarbeten hos Isover och värmepumpen samt vid driftstopp i värmepumpen.

Power grid connection parameters

effektbehov på cirka	23 MW		Överföringsavgift el	5 kr/MWh
transformering	50/11 kV	ny station		
Byggtid	24 months	från beställning		
Kostnaden är cirka	24 MSEK			
Kabelförband från station till anslutningspunkten ca	1,2 km			
Kostnad kabelförband	6 MSEK			
Total kostnad för denna anslutning är cirka	30 MSEK			

greenhouse size, ha	15	15	15
Length of pipe, m	500	500,0	500
Annual supply, MWh	21000	21000	21000

Investment	Selleberga	Scaled	Hot (no HP)
Heat exchanger, pumps and pipe	560 000	560 000	560 000
Heat pump	12 500 000	12 500 000	0
Buildings and land	1 120 000	1 120 000	1 120 000
Distribution piping	3 227 000	3 227 000	3 227 000
Pump stations	400 000	400 000	400 000
Back-up boiler	140 000	140 000	140 000
Engineering 4%	717 880	717 880	717 880
Unforeseen 10%	1 866 488	1 866 488	616 488
Total investment heat	20 531 368	20 531 368	6 781 368

Operations cost SEK	Selleberga	Scaled	Hot (no HP)
Purchase price heat, kr/MWh	0	0	97
Purchase cost heat, SEK	0	0	2 037 000
Heat pump electrical power	2 037 000	2 037 000	0
Back-up boiler	472 500	472 500	472 500
Pumps	85 601	85 601	85 601
Ops and maintenance	1 050 000	1 050 000	210 000
Total ops cost	3 645 101	3 645 101	2 805 101
Ops cost per kWh	174	174	134
Capex	1 790 018	1 790 018	591 231
Total annual cost	5 435 119	5 435 119	3 396 332
Price of heat kr/MWh	259	259	162

Energy needs

Heat	1500 MWh/ha
Power grid	1,42857143 MW/ha
Power heat pu	0,21428571 MW/ha