



## **Generation Investment Study**

### **Volume 5: Generation and Transmission Appendices**

#### **Appendix 9: SCREENING CURVE ANALYSIS AND COST OF REHABILITATION**



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## A9.1 Introduction

Due to constraints in the number of candidate plants that can be analysed in WASP, all candidate and rehabilitation plants used in each jurisdiction were first compared to each other through the use of screening curves. The results were used to select the most attractive plants to be considered as candidates for new capacity additions or for rehabilitation.

The screening curve method expresses the total annualized electricity production cost for a generating unit, including all capital and operating expenses, as a function of the unit annual capacity factor. The screening curve is calculated by determining the unit generation costs for two extreme points i.e.  $T_1$  (0 hour) and  $T_2$  (8,760 hours) The unit costs are expressed in €/kW-year. A straight line extrapolation is assumed between these two points.

Capital and O&M costs for new plants are presented in Sections 2.4 and 2.5 of the main report. Rehabilitation costs are shown in Section A9.4 of this appendix.

The value for  $T_1$  represents the fixed yearly expences, as per the following equation:

$$T_1 \text{ (€/kW-year)} = \text{Investments} \times (i \times (1 + i)^t) / ((1 + i)^t - 1) + \text{O\&M}_{\text{FIX}},$$

Where:

**Investments** – Represents the investment costs for new plants or rehabilitation for life extension of existing plants, plus the investments for compliance with environmental standards;

**O&M<sub>FIX</sub>** – Fixed yearly O&M costs for the TPP unit per kW;

**i** – Interest rate per year (assumed as 10%, i.e. 0.1 in equation);

**t** – Life time of the new unit, or life extension for existing units planned for rehabilitation.

For rehabilitation for life extension, the life time is assumed to be 15 years. If the lifetime of compliance for environmental upgrading is different from life extension, «t» is adjusted to the remaining life for environmental compliance, and applied separately for that investment.

The next point  $T_2$  represents the year costs for full yearly production, i.e. for the operation of 8760 hours, as:

$$T_2 \text{ (€/kW-year)} = T_1 + 8,76 \times ( \text{FC}_{100\%} + \text{O\&M}_{\text{VAR}} + \text{O\&M}_{\text{NOx}} + \text{O\&M}_{\text{SOx}} + \text{O\&M}_{\text{CO2}} );$$

Where:

**FC<sub>100%</sub>** = ( Full Load Heat Rate in (kcal/kWh) x Fuel Costs in (cents/Gcal) ) /  $10^5$  (€/MWh);

**O&M<sub>VAR</sub>** - Variable costs of the TPP unit (€/MWh);

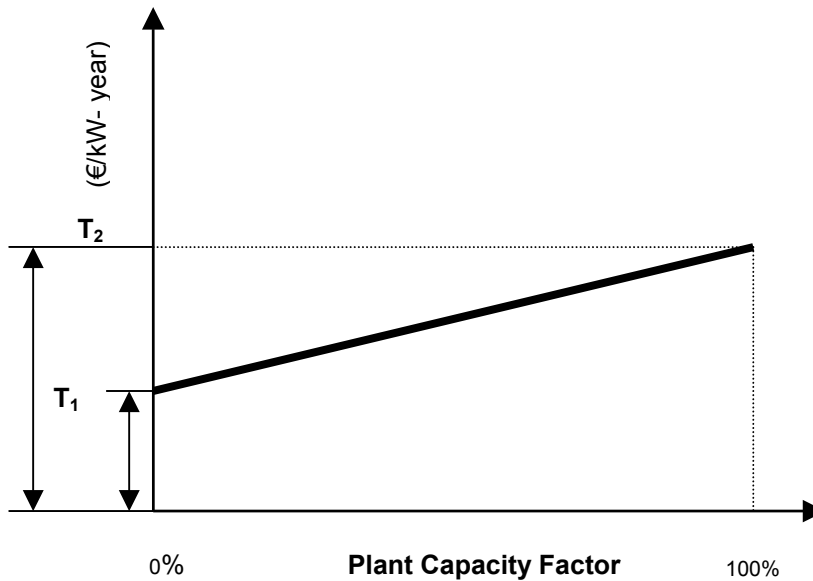
**O&M<sub>NOx</sub>** - Variable costs of the NO<sub>x</sub> control (€/MWh);



**O&M<sub>SO<sub>x</sub></sub>** - Variable costs of the SO<sub>x</sub> control, which includes: the variable O&M costs of FGD, raw material costs and power selfconsumption costs (€/MWh)

**O&M<sub>CO<sub>2</sub></sub>** - Cost proportional to CO<sub>2</sub> emission, in case of CO<sub>2</sub> reduction scenario .

Based on the values of **T<sub>1</sub>** and **T<sub>2</sub>** the screening curves can be presented as in the Figure below.

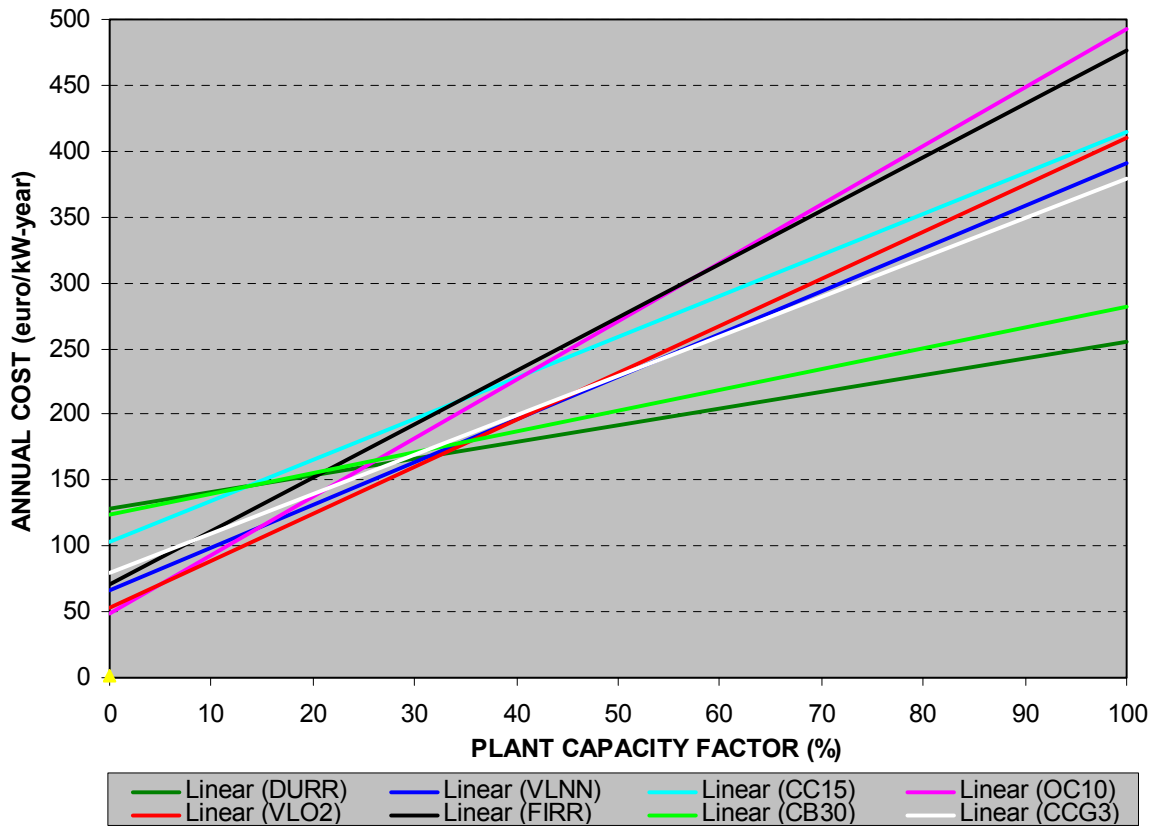


## A9.2 Screening Curves for Candidate Plants in each Jurisdiction

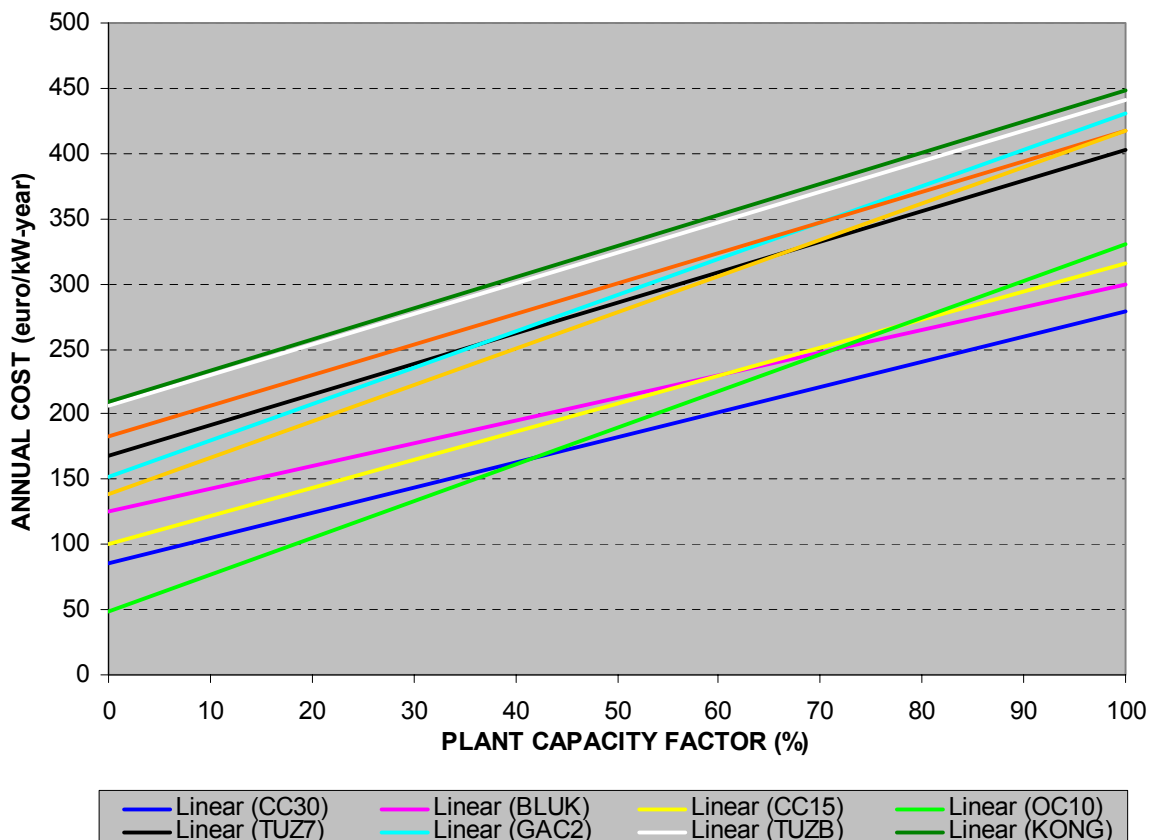
For each jurisdiction, screening curves were developed for the candidate plants. The results are presented in Figures A9.1 through A9.9.



**Figure A9.1 Albania Screening Curves for Candidate Plants**

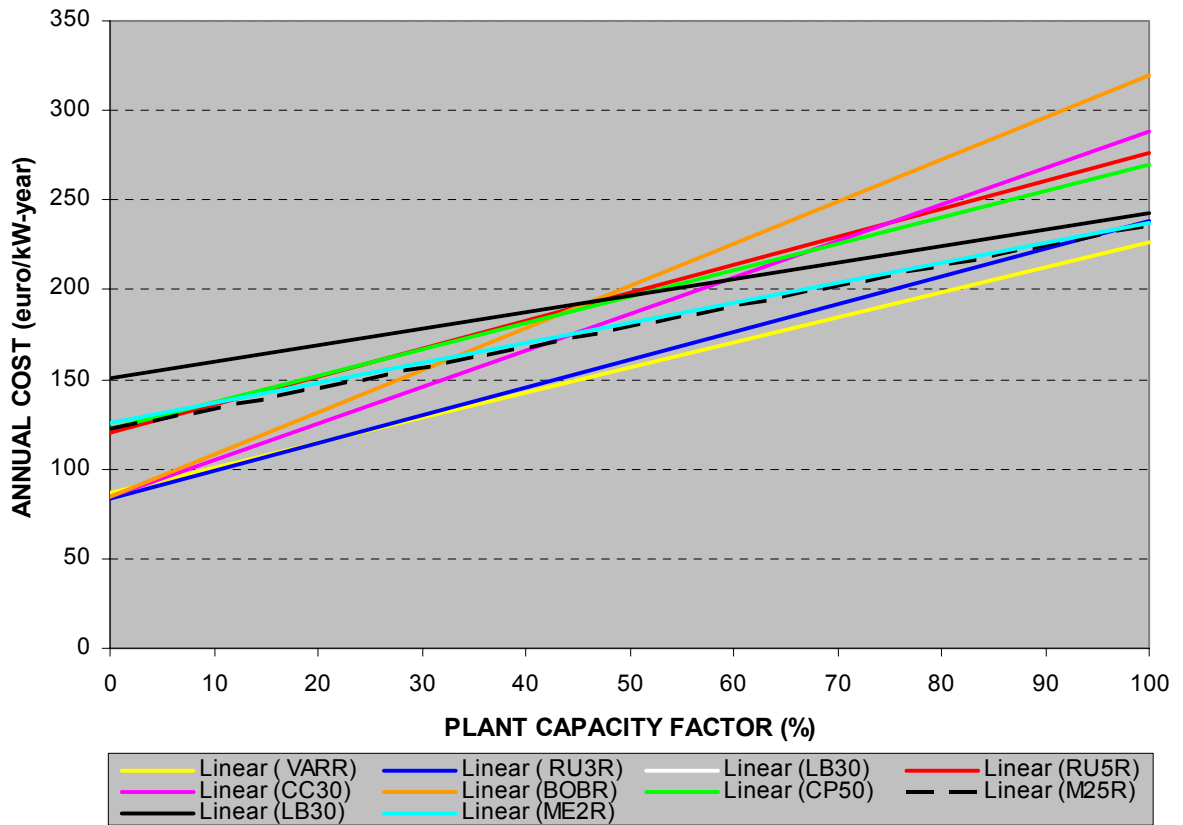


**Figure A9.2 B&H Screening Curves for Candidate Plants**

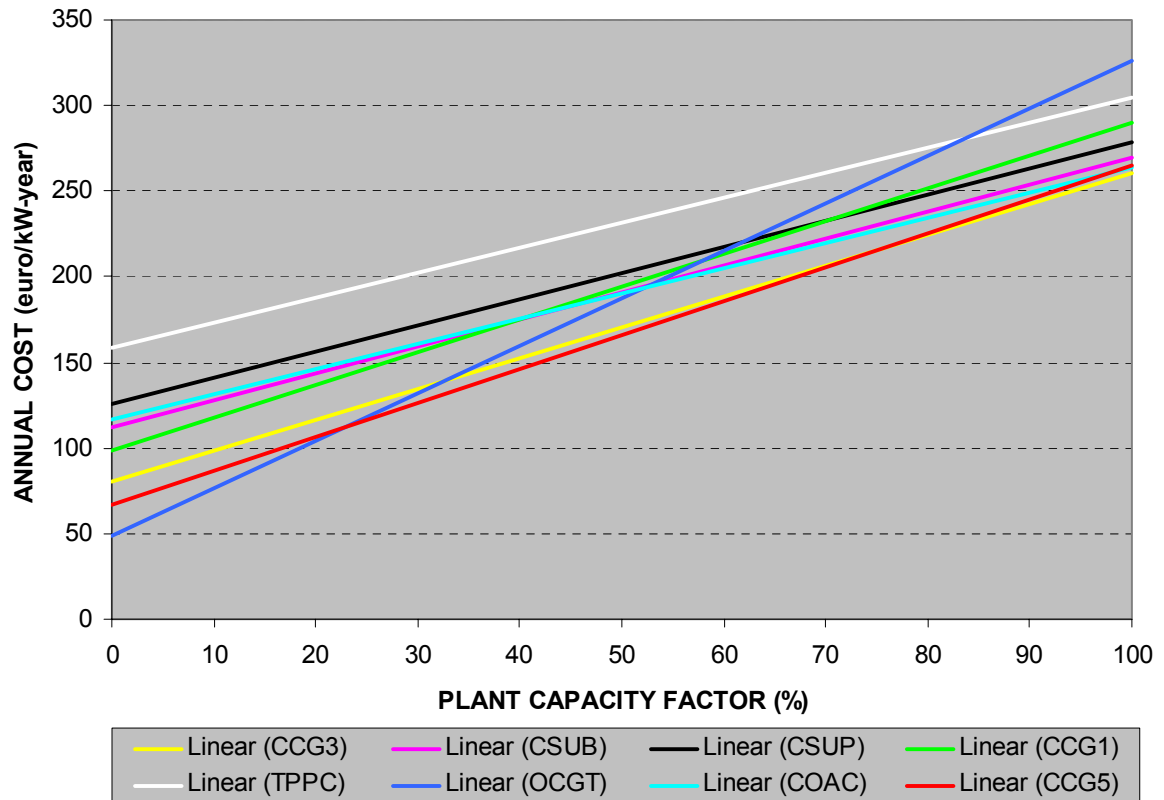




**Figure A9.3 Bulgaria Screening Curves for Candidate Plants**

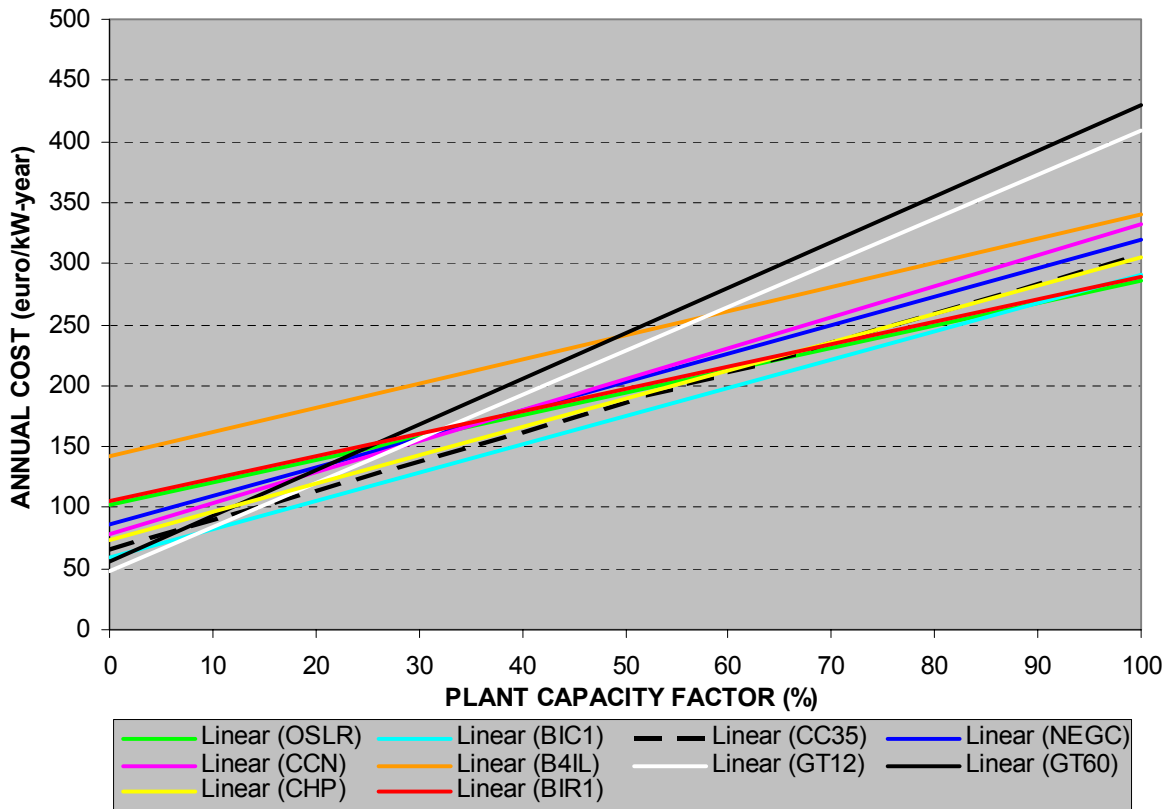


**Figure A9.4 Croatia Screening Curves for Candidate Plants**

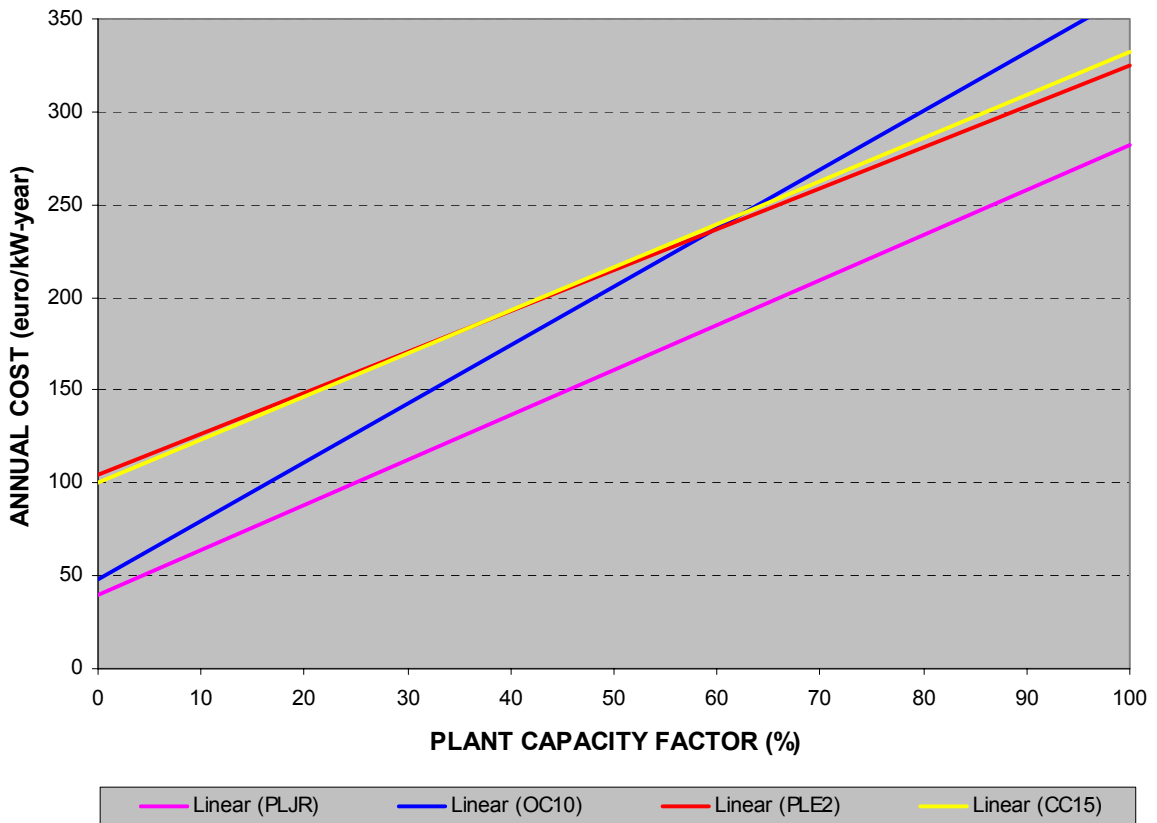




**Figure A9.5 Macedonia Screening Curves for Candidate Plants**

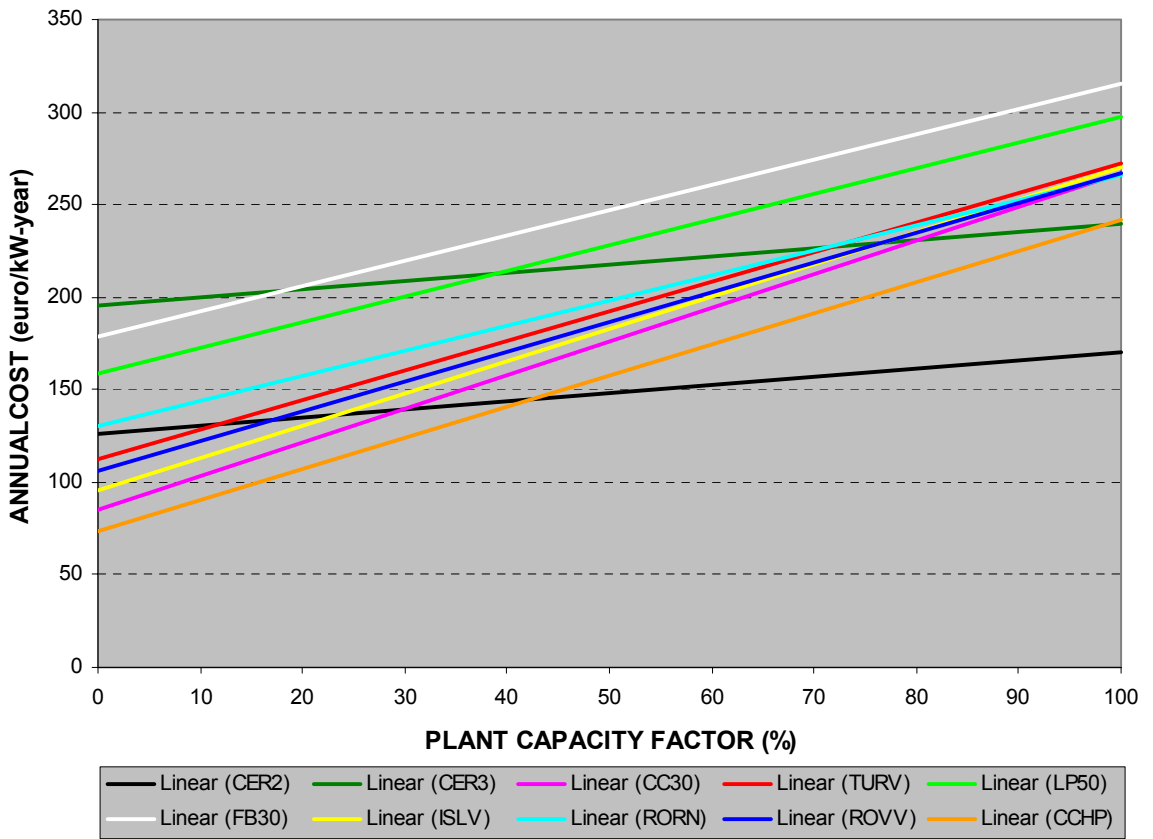


**Figure A9.6 Montenegro Screening Curves for Candidate Plants**

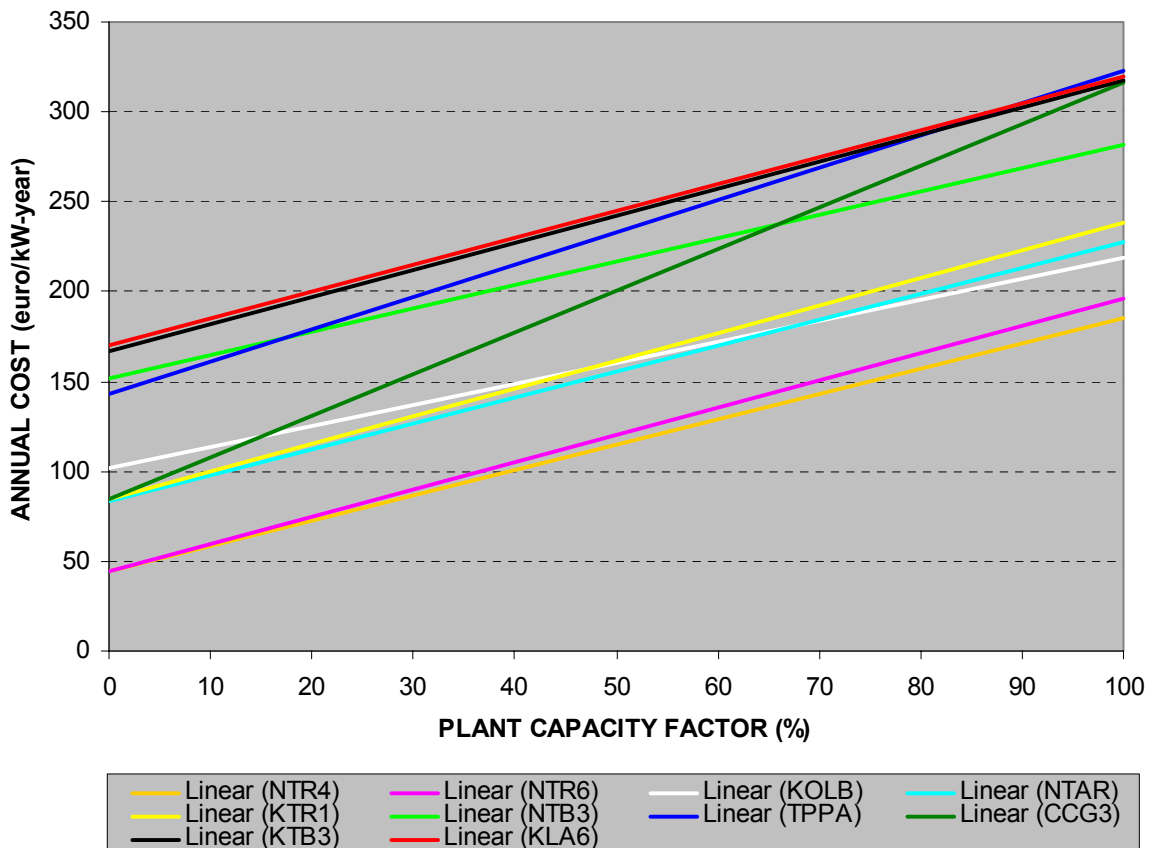




**Figure A9.7 Romania Screening Curves for Candidate Plants**

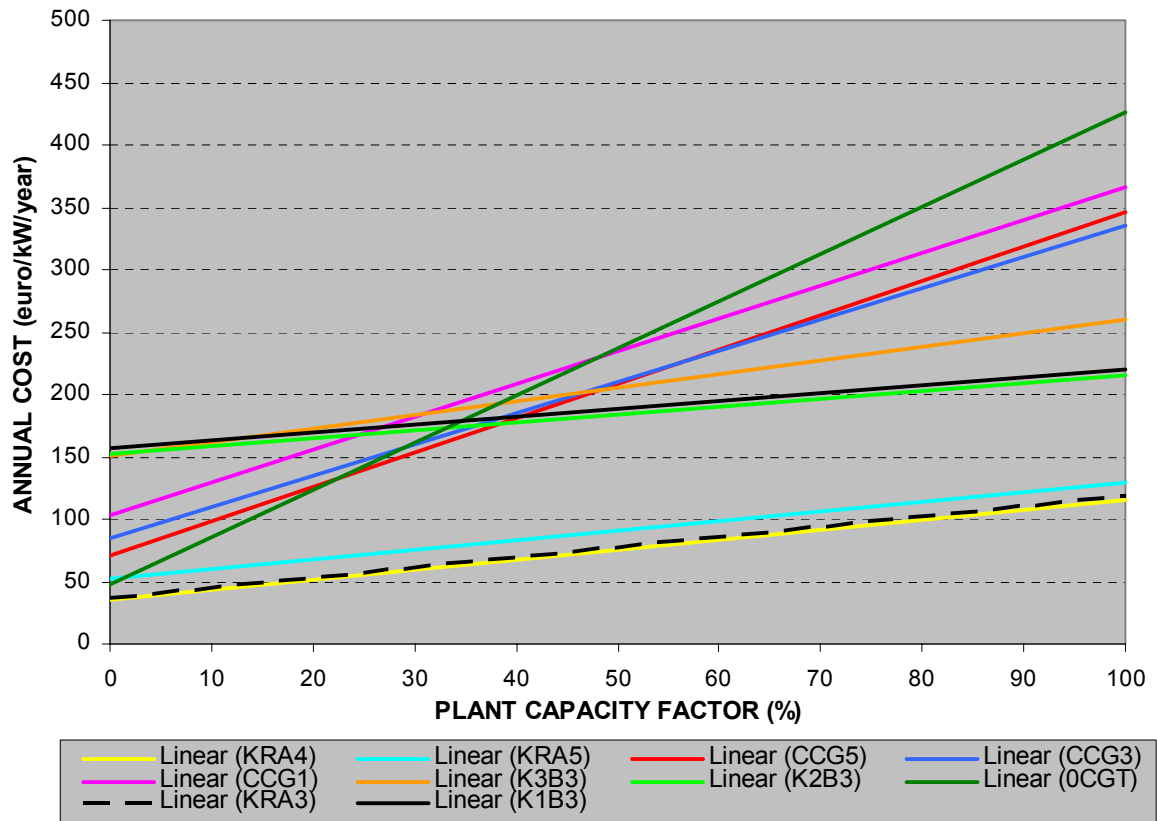


**Figure A9.8 Serbia Screening Curves for Candidate Plants**





**Figure A9.9 UNMIK Screening Curves for Candidate Plants**

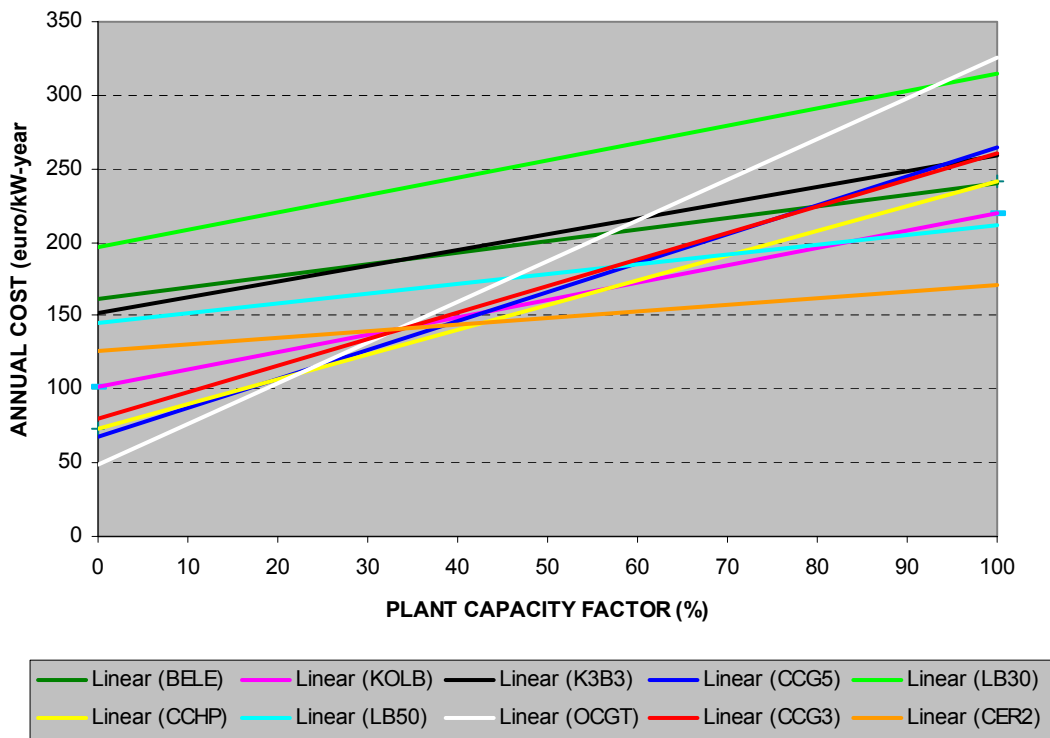




### A9.3 Screening Curves for Candidate Plant in the Region

A review of all the screening curves in each jurisdiction was carried out to select the most competitive candidates for the region. The results are shown in Figure A9.10.

**Figure A9.10 SEE Region Screening Curves**



The most competitive candidate plants are:

- Belene nuclear unit 1 (1,000 MW)
- Cernavoda nuclear units 2 and 3 (700 MW)
- Kolubara lignite units 1 and 2 (320 MW each)
- Kosovo lignite, 300 MW units
- Generic Kosovo lignite, 500-MW sub-critical units
- Generic imported coal, 500-MW super-critical units
- Generic combined cycle gas turbine, 300- and 500-MW units
- Generic open cycle gas turbine, 100-MW units



- Generic CHP gas turbine, 100-MW units

#### **A9.4 Screening Curves for Plant Planned for Rehabilitation**

In Scenario B, several WASP runs were made. The first run (Case 1) included the rehabilitation programme as stated by the utilities. All plants to be rehabilitated were included in the WASP run. No changes were made.

In Case 2, the economics of the rehabilitation programmes were first tested through the use of screening curves. Rehabilitation costs were obtained from the utilities and reviewed and updated by the SEEC Environmental Team. Details of the cost estimates are presented in a separate report entitled "GIS – Implications for Investments in Environmental Protection". The list of rehabilitated units, timing of rehabilitation and costs are summarized in Table A9.1.

For Romania and Bulgaria, rehabilitation includes technical rehabilitation (life extension) and full environmental compliance (particulate, NO<sub>x</sub> and SO<sub>x</sub> controls) with EC regulations (Directive 2001/80/EC). For the other jurisdictions, rehabilitation includes technical rehabilitation (life extension) and partial environmental compliance (particulate, and NO<sub>x</sub>).

The total cost of rehabilitation, assuming life extension and full environmental compliance, is estimated at 6,486 million Euros. The rehabilitation cost without SO<sub>x</sub> environmental controls is estimated at 5,067 million, a difference of 1,419 million. For Scenario B Case 1, the total cost of rehabilitation assuming full compliance in Romania and Bulgaria and partial compliance in the other jurisdictions is estimated at 5,860 million Euros.



Table A9.1 Rehabilitation Costs (Euros million)

Jurisdiction	Unit Name	Capacity (MW)	Rehab Year	Rehab costs for life extension	Environment Control Costs				Total Costs	Costs for Life Exten.+E SP+NOx
					ESP	NOx	SOx	TOTAL		
Albania		68.16		30.00	0.000	1.510	9.720	11.230	41.230	31.510
	Fier Czech	58	2005-6	19.0		<b>1.510</b>	<b>8.100</b>	<b>9.610</b>	28.6	20.5
	Fier China	11	2005-6	11.0			<b>1.620</b>	<b>1.620</b>	12.6	11.0
B&H		1034.90		391.00	23.180	36.280	133.500	192.960	583.960	450.460
	Gacko	276	2008	105.0	<b>6.260</b>	<b>10.370</b>	<b>21.000</b>	<b>37.630</b>	142.6	121.6
	Ugljevik	279	2010	105.0	<b>5.510</b>	<b>8.900</b>	<b>45.000</b>	<b>59.410</b>	164.4	119.4
	Tuzla 5	182	2005-6	70.0	<b>5.000</b>	<b>7.270</b>	<b>26.000</b>	<b>38.270</b>	108.3	82.3
	Tuzla 6	198	2006-7	75.0	<b>3.500</b>	<b>7.750</b>	<b>27.000</b>	<b>38.250</b>	113.3	86.3
	Kakanj 6	100	2007	36.0	<b>2.910</b>	<b>1.990</b>	<b>14.500</b>	<b>19.400</b>	55.4	40.9
Bulgaria		3811.00		1584.00	70.720	21.580	480.000	572.300	2156.300	1676.300
	Maritsa East 3 Unit 1	189	2006	82.0	<b>5.150</b>		<b>29.000</b>	<b>34.150</b>	116.2	87.2
	Maritsa East 3 Unit 2	189	2005	82.0	<b>5.150</b>		<b>29.000</b>	<b>34.150</b>	116.2	87.2
	Maritsa East 3 Unit 3	189	2005	82.0	<b>5.150</b>		<b>29.000</b>	<b>34.150</b>	116.2	87.2
	Maritsa East 3 Unit 4	189	2007	82.0	<b>5.150</b>		<b>29.000</b>	<b>34.150</b>	116.2	87.2
	Maritsa East 2 Unit 1	148	2005	57.0			<b>20.000</b>	<b>20.000</b>	77.0	57.0
	Maritsa East 2 Unit 2	148	2006	57.0			<b>20.000</b>	<b>20.000</b>	77.0	57.0
	Maritsa East 2 Unit 3	148	2007	57.0			<b>20.000</b>	<b>20.000</b>	77.0	57.0
	Maritsa East 2 Unit 4	148	2008	57.0			<b>20.000</b>	<b>20.000</b>	77.0	57.0
	Maritsa East 2 Unit 5	185	2009	90.0			<b>29.500</b>	<b>29.500</b>	119.5	90.0
	Maritsa East 2 Unit 6	185	2008	90.0			<b>29.500</b>	<b>29.500</b>	119.5	90.0
	Bobov Dol 1	198	2009	74.0	<b>5.000</b>	<b>4.450</b>	<b>27.000</b>	<b>36.450</b>	110.5	83.5
	Bobov Dol 2	198	2010	74.0	<b>5.000</b>	<b>4.450</b>	<b>27.000</b>	<b>36.450</b>	110.5	83.5
	Bobov Dol 3	198	2011	74.0	<b>5.000</b>	<b>4.450</b>	<b>27.000</b>	<b>36.450</b>	110.5	83.5
	Varna 1	200	2009	80.0	<b>4.210</b>		<b>24.000</b>	<b>28.210</b>	108.2	84.2
	Varna 2	200	2010	80.0	<b>4.210</b>	<b>3.560</b>	<b>24.000</b>	<b>31.770</b>	111.8	87.8
	Varna 3	200	2011	80.0	<b>4.210</b>	<b>3.560</b>	<b>24.000</b>	<b>31.770</b>	111.8	87.8
	Varna 4	200	2012	80.0	<b>4.210</b>	<b>1.110</b>	<b>24.000</b>	<b>29.320</b>	109.3	85.3
	Varna 5	200	2013	80.0	<b>4.210</b>		<b>24.000</b>	<b>28.210</b>	108.2	84.2
	Varna 6	200	2014	80.0	<b>4.210</b>		<b>24.000</b>	<b>28.210</b>	108.2	84.2
	Ruse 1	25	2009	15.0	<b>2.500</b>		<b>2.500</b>	<b>2.500</b>	17.5	17.5
	Ruse 2	25	2010	15.0	<b>2.500</b>		<b>2.500</b>	<b>2.500</b>	17.5	17.5
	Ruse 3	100	2005	40.0	<b>4.000</b>		<b>4.000</b>	<b>4.000</b>	44.0	44.0
	Ruse 4	100	2008	40.0			<b>0.000</b>	<b>0.000</b>	40.0	40.0
	Ruse 5	25	2011	18.0			<b>0.000</b>	<b>0.000</b>	18.0	18.0
	Ruse 6	25	2012	18.0	<b>0.860</b>		<b>0.860</b>	<b>0.860</b>	18.9	18.9
Montenegro		191.00		72.00	4.500	3.560	28.000	36.060	108.060	80.1
	Pljevlja	191	2010	72.0	<b>4.500</b>	<b>3.560</b>	<b>28.000</b>	<b>36.060</b>	108.1	80.1



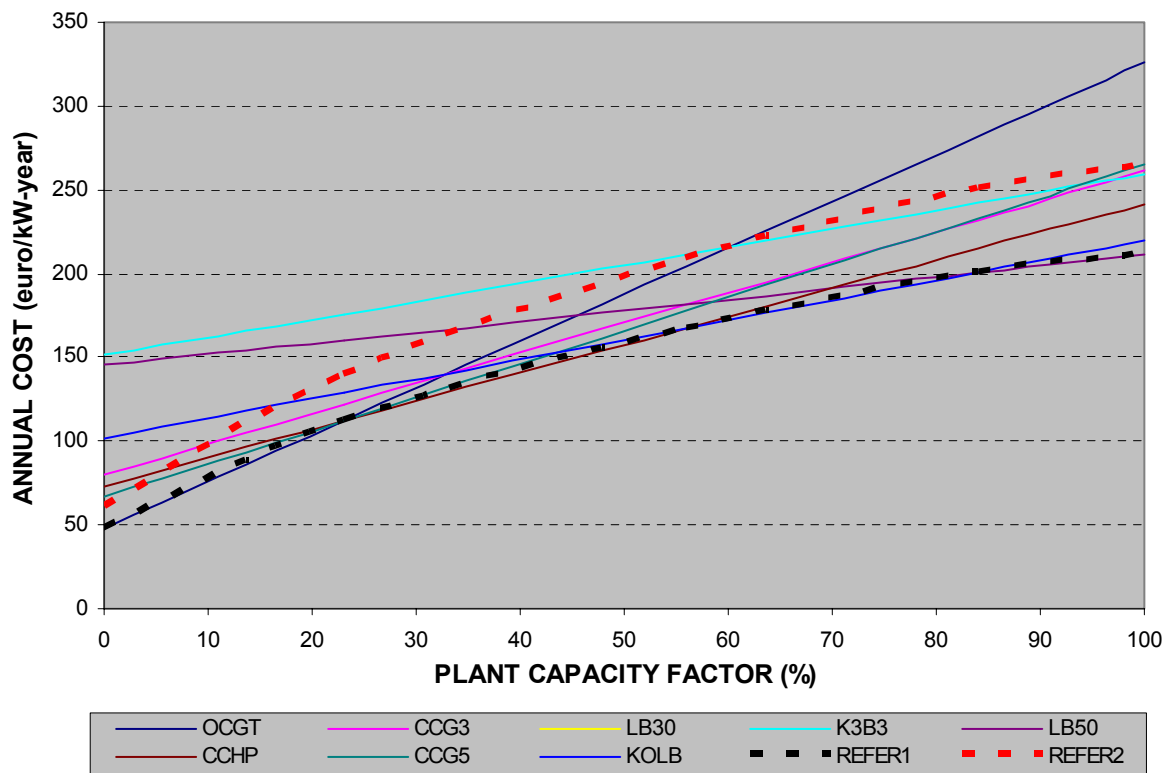
Table A9.1 Rehabilitation Costs (Euros million) (cont)

Jurisdiction	Unit Name	Capacity (MW)	Rehab Year	Rehab costs for life Extension	Environment Control Costs				Total Costs	Costs for Life Exten.+E SP+NOx
					ESP	NOx	SOx	TOTAL		
Macedonia		927.00		438.00	2.00	1.12	95.00	98.12	536.12	441.12
	Bitola 1	207	2013-14	95.0	1.000		29.000	30.000	125.0	96.0
	Bitola 2	207	2015-16	95.0	1.000		29.000	30.000	125.0	96.0
	Bitola 3	207	2019	98.0		1.120	29.000	30.120	128.1	99.1
	Negotino	197	2009-10	100.0				0.000	100.0	100.0
	Oslomej	109	2011-12	50.0			8.000	8.000	58.0	50.0
Romania		2585.00		1038.00	37.200	54.910	313.000	405.110	1443.110	1130.1
	Turceni Unit 3	272	2008-9	138.0	4.500	6.980	38.000	49.480	187.5	149.5
	Turceni Unit 5	272	2005-6			6.980	38.000	44.980	45.0	7.0
	Turceni Unit 6	272	2007-8	138.0	4.500	6.980	38.000	49.480	187.5	149.5
	Rovinari Unit 3	278	2006-7	120.0		6.980	38.000	44.980	165.0	127.0
	Rovinari Unit 5	278	2009-10	120.0	5.500	6.980	38.000	50.480	170.5	132.5
	Isalnita Unit 7	266	2007-8	105.0	6.880	6.700	38.000	51.580	156.6	118.6
	Paroseni Unit 4	120	2008	45.0	0.820	2.630	22.000	25.450	70.5	48.5
	Galati Unit 3	92	2007	25.0				0.000	25.0	25.0
	Galati Unit 5	92	2012	25.0				0.000	25.0	25.0
	Galati Unit 6	92	2013	25.0				0.000	25.0	25.0
	Galati Unit 4	50	2009	15.0				0.000	15.0	15.0
	Deva Unit 1	167	2006	94.0	5.000	3.560	21.000	29.560	123.6	102.6
	Deva Unit 2	167	2007	94.0	5.000	3.560	21.000	29.560	123.6	102.6
	Deva Unit 4	167	2009	94.0	5.000	3.560	21.000	29.560	123.6	102.6
Serbia		3140.00		1160.00	44.020	53.730	359.500	457.250	1617.250	1257.8
	Nikola TeslaA1	191	2009	91.0	4.900	1.120	25.000	31.020	122.0	97.0
	Nikola TeslaA2	191	2010	91.0	4.900	1.120	25.000	31.020	122.0	97.0
	Nikola TeslaA4	280	2006	92.0	6.400	5.030	37.000	48.430	140.4	103.4
	Nikola TeslaA6	280	2007	92.0	6.400	5.030	37.000	48.430	140.4	103.4
	Nikola TeslaB1	580	2011	220.0	1.800	12.300	66.000	80.100	300.1	234.1
	Nikola TeslaB2	580	2013	220.0	1.800	12.300	66.000	80.100	300.1	234.1
	KostolacA1	90	2006	40.0	2.220		12.500	14.720	54.7	42.2
	KostolacB1	320	2015	115.0	7.800	7.360	45.500	60.660	175.7	130.2
	KostolacB2	320	2017	115.0	7.800	7.360	45.500	60.660	175.7	130.2
	Novi Sad1	108	2005	30.0		0.750		0.750	30.8	30.8
	Novi Sad2	100	2006	27.0		0.680		0.680	27.7	27.7
	Zrenjanin	100	2005	27.0		0.680		0.680	27.7	27.7
<b>GRAND TOTAL</b>		<b>11757.1</b>		<b>4713.0</b>	<b>181.6</b>	<b>172.7</b>	<b>1418.7</b>	<b>1773.0</b>	<b>6486.0</b>	<b>5067.3</b>



The cost of rehabilitation was then compared to the cost of the most competitive regional candidate units. Figure A9.11 shows the screening curves for these selected regional candidates. The nuclear units were eliminated from this Figure as they are very site specific. A composite curve following the lower points (black dotted line called REFER1) of the screening curves was added to serve as a benchmark for evaluating the economic attractiveness of the rehabilitated plant. Another composite curve (red dotted line called REFER2) was also computed to reflect a greater range of costs for the selection of the most competitive candidate plant that can be used in the region. The costs associated with the second composite curve are 25% higher than the costs of the first composite curve.

**Figure A9.11 Screening Curves for Rehabilitation Benchmark**

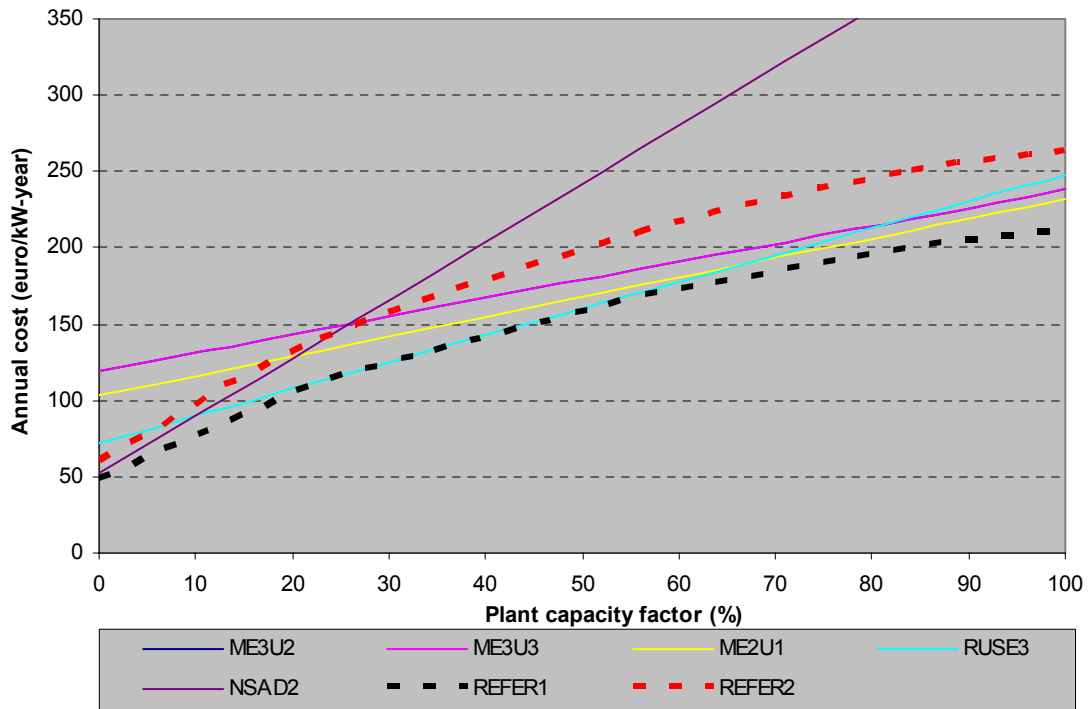


For each year, screening curves for the plants under rehabilitation were developed and superimposed on the two composite “benchmark” curves. The results are shown in Figure A9.12 through A9.25. These two composite curves were used to select the plants to be rehabilitated under Case 2. Two cases 2A1 and 2A2 were analyzed in the WASP model. Case 2A1 used the composite curve with the lowest values (REFER1) as a benchmark to select which plants should be rehabilitated. Case 2A2 used the other composite curve (REFER2).

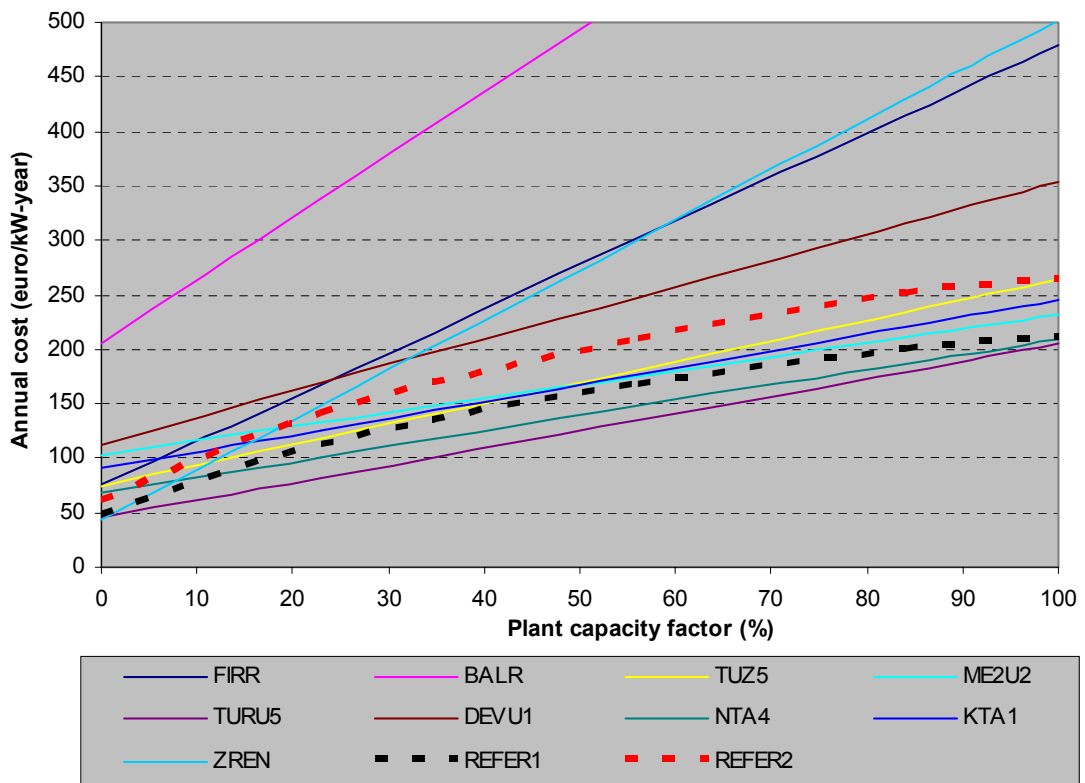
For example, the plants to be rehabilitated in 2006 do not appear to be economical when compared to the “low” composite screening curve (REFER1). Under the “high” composite curve, all plants to be rehabilitated can be considered to be economically attractive within the corresponding range of plant capacity factor.



**Figure A9.12 Year 2006 Rehabilitation Versus Benchmark Curves**

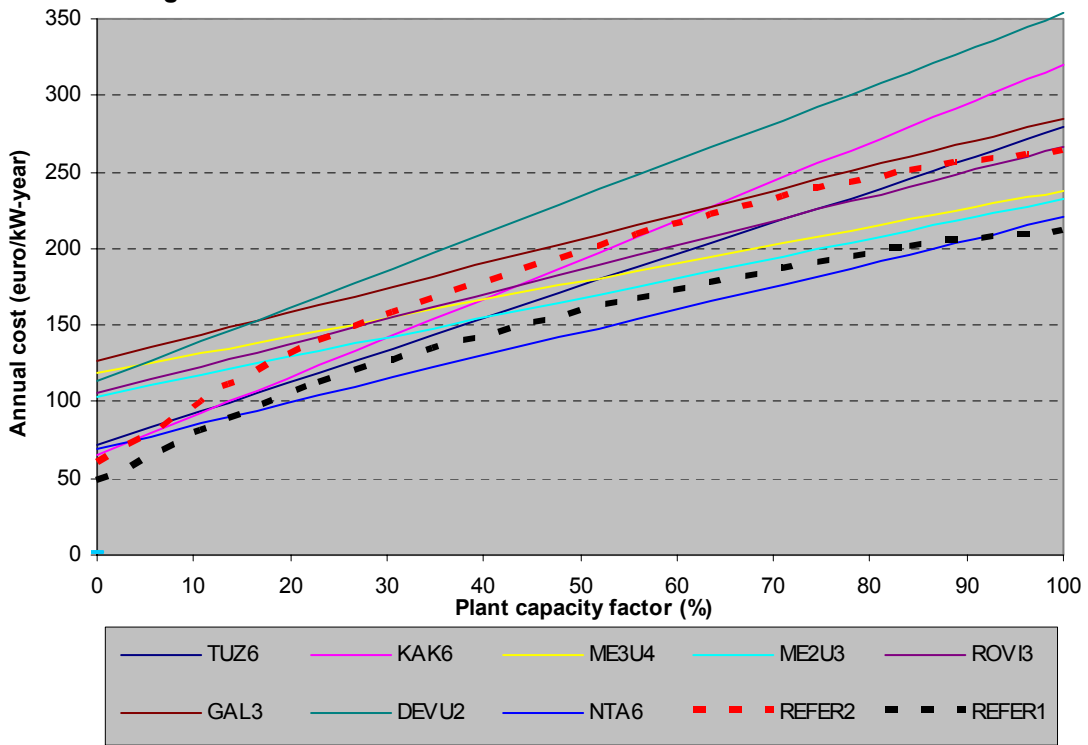


**Figure A9.13 Year 2007 Rehabilitation Versus Benchmark Curves**

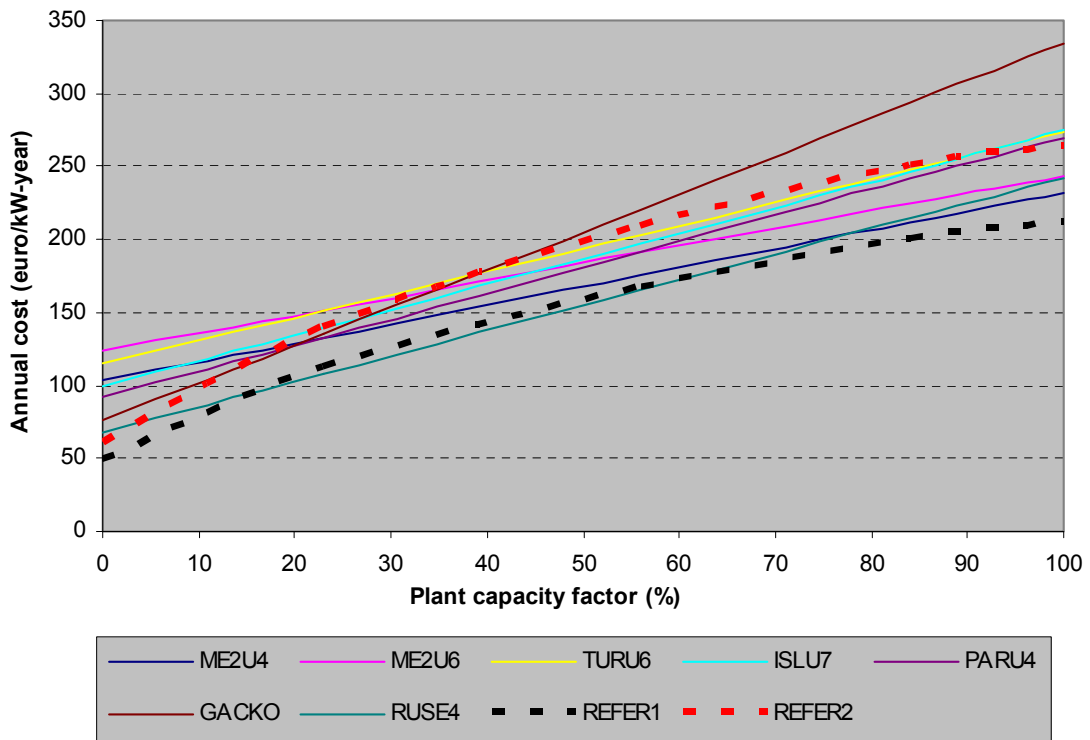




**Figure A9.14 Year 2008 Rehabilitation Versus Benchmark Curves**

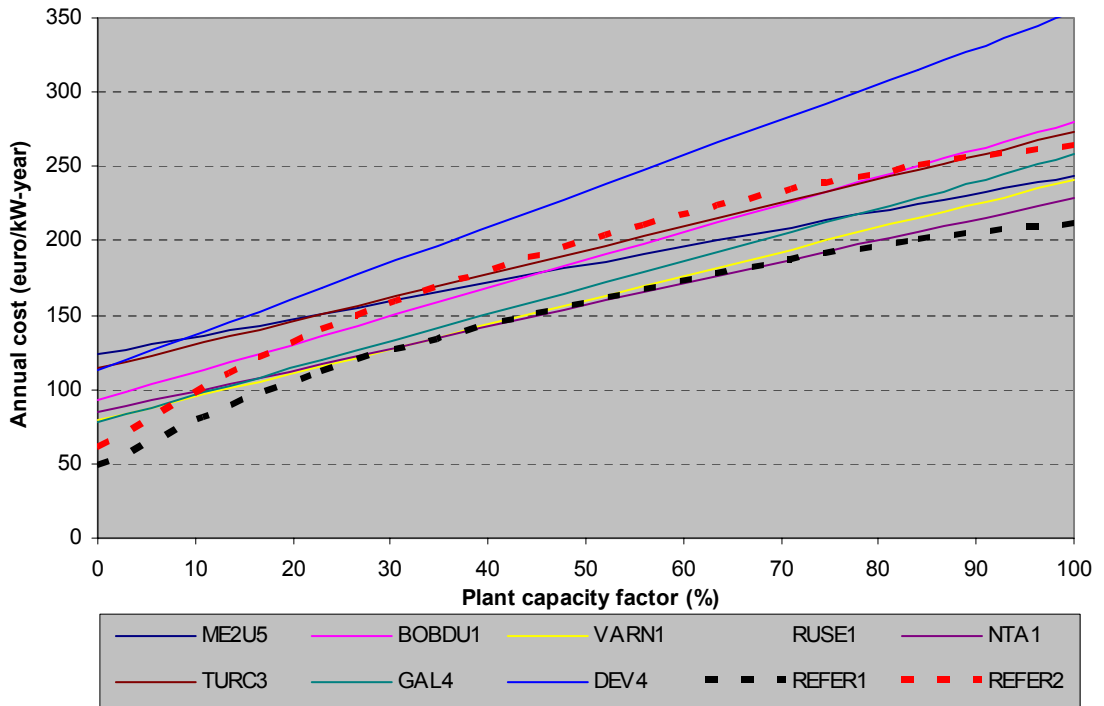


**Figure A9.15 Year 2009 Rehabilitation Versus Benchmark Curves**

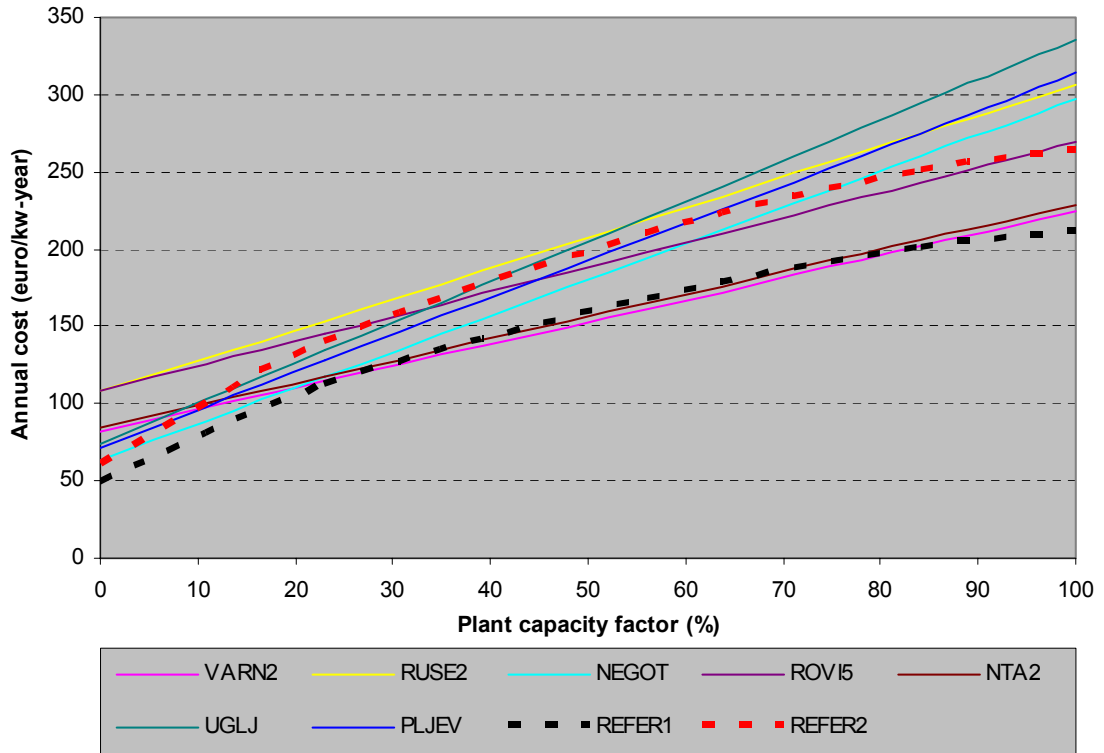




**Figure A9.16 Year 2010 Rehabilitation Versus Benchmark Curves**

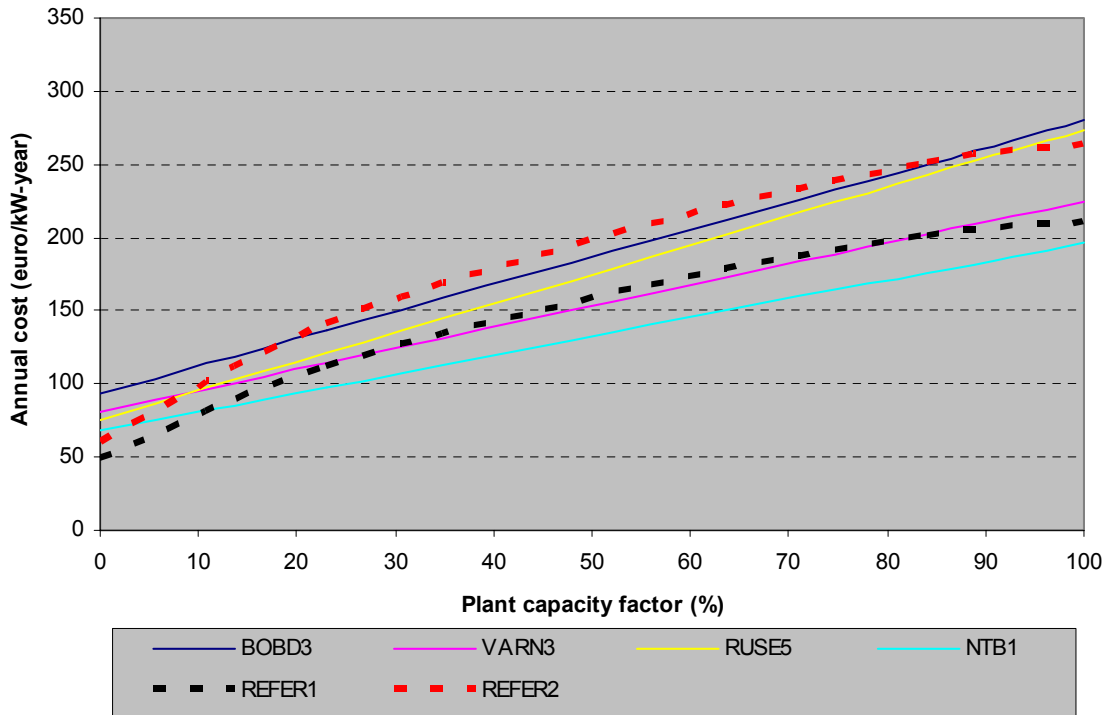


**Figure A9.17 Year 2011 Rehabilitation Versus Benchmark Curves**

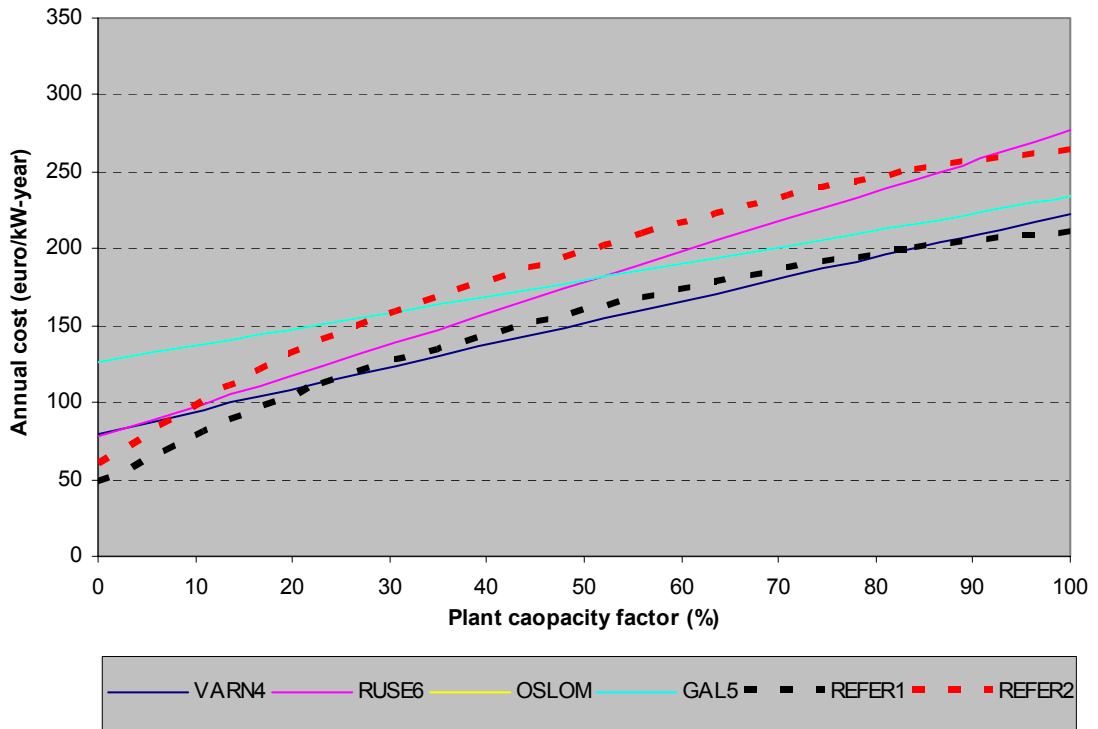




**Figure A9.18 Year 2012 Rehabilitation Versus Benchmark Curves**

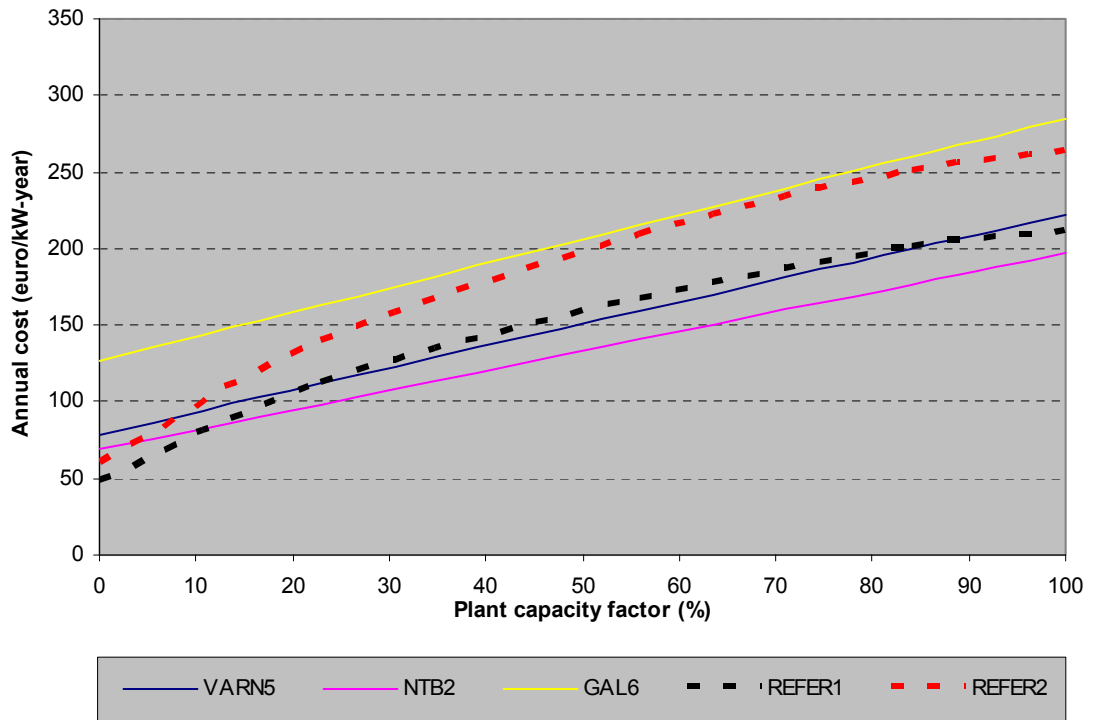


**Figure A9.19 Year 2013 Rehabilitation Versus Benchmark Curves**

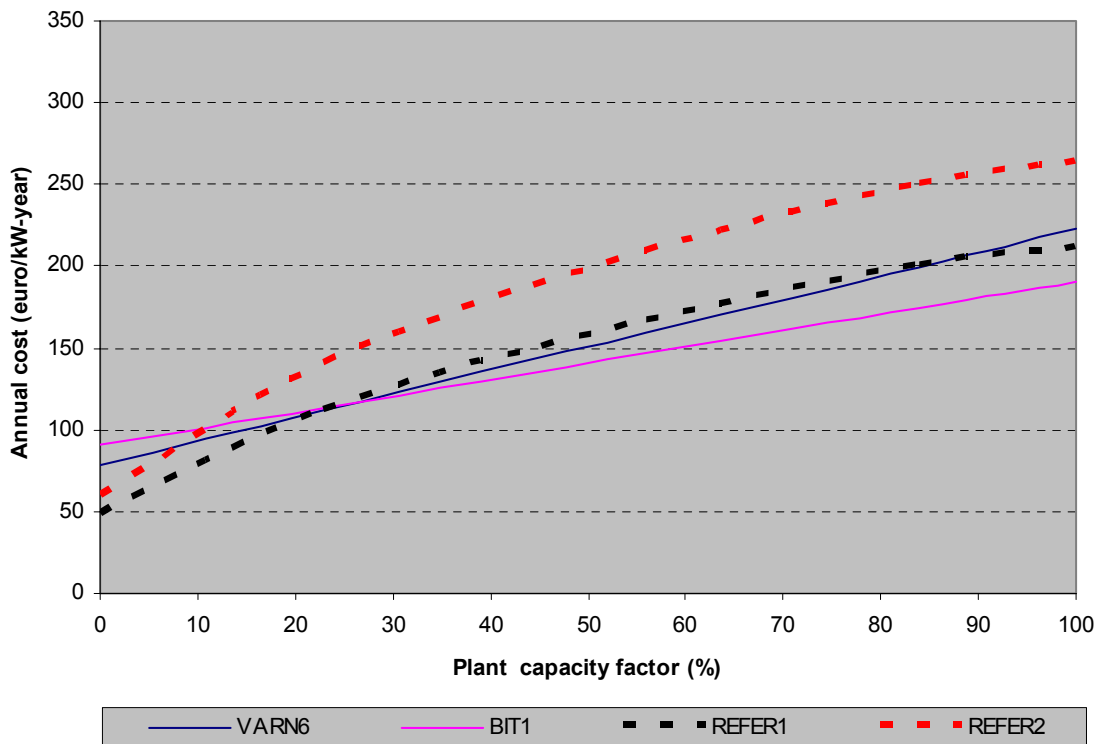




**Figure A9.20 Year 2014 Rehabilitation Versus Benchmark Curves**

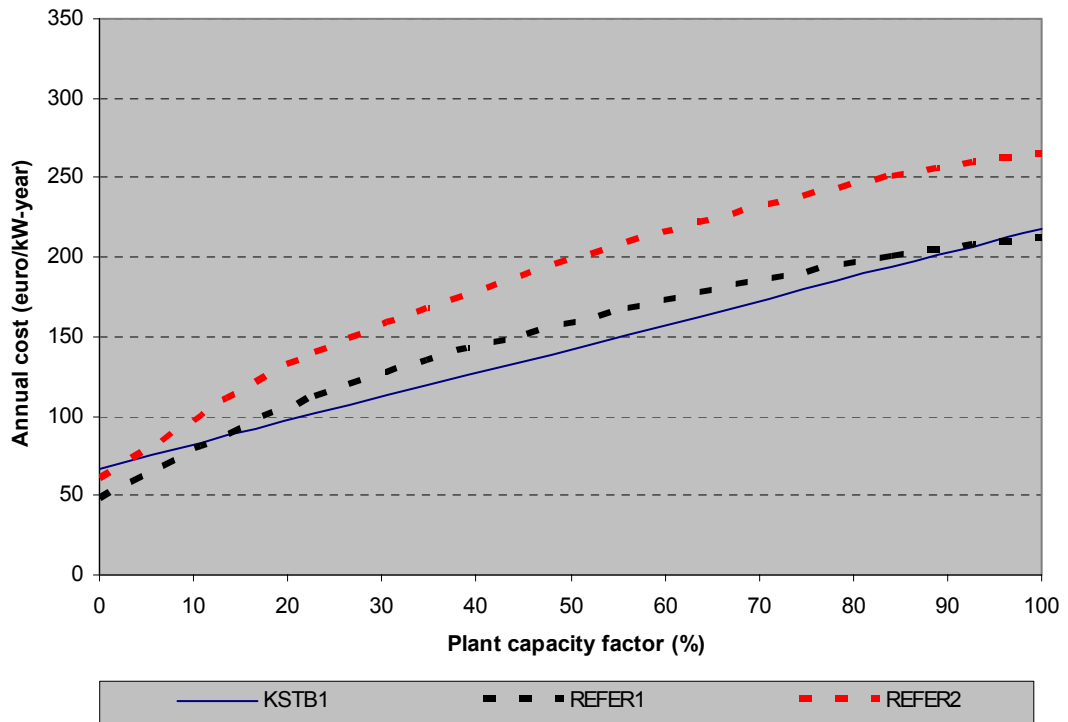


**Figure A9.21 Year 2015 Rehabilitation Versus Benchmark Curves**

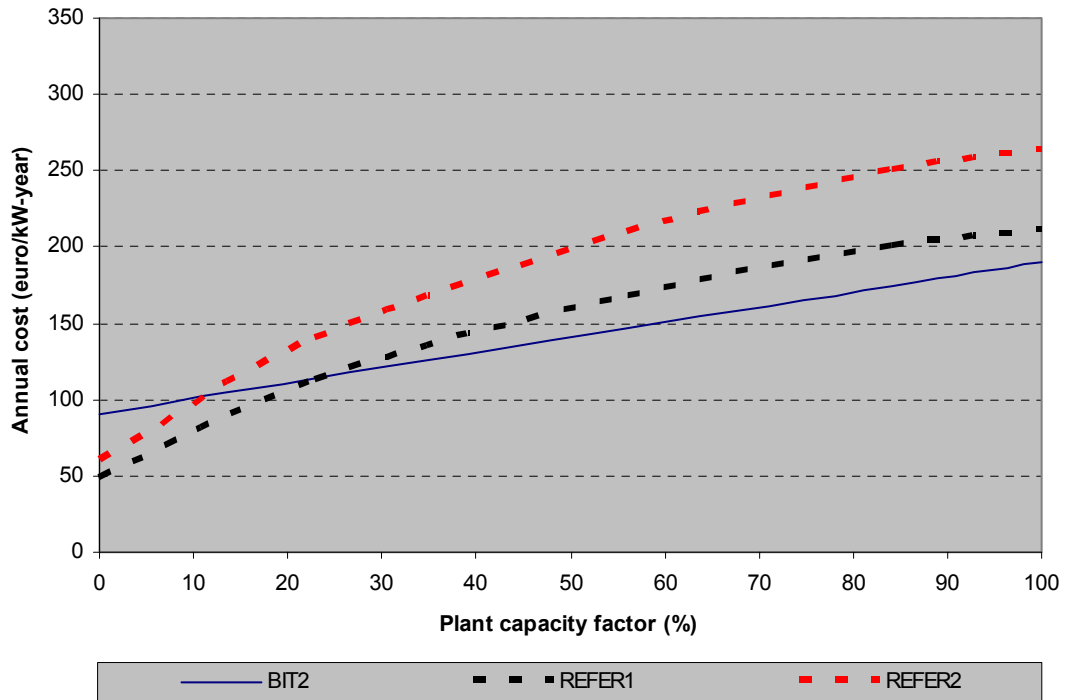




**Figure A9.22 Year 2016 Rehabilitation Versus Benchmark Curves**

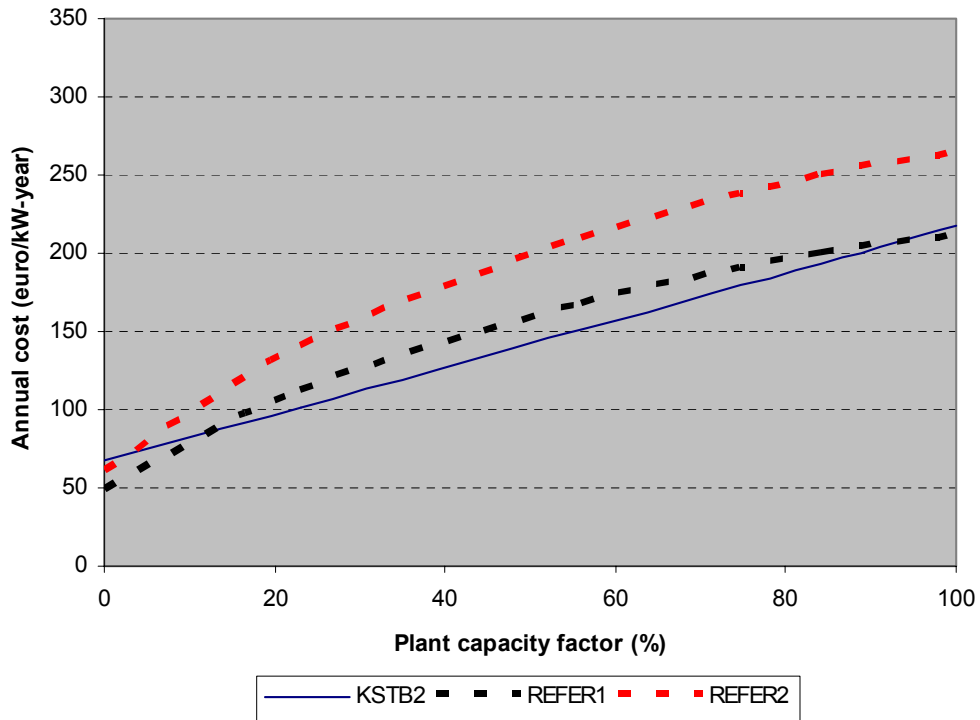


**Figure A9.23 Year 2017 Rehabilitation Versus Benchmark Curves**

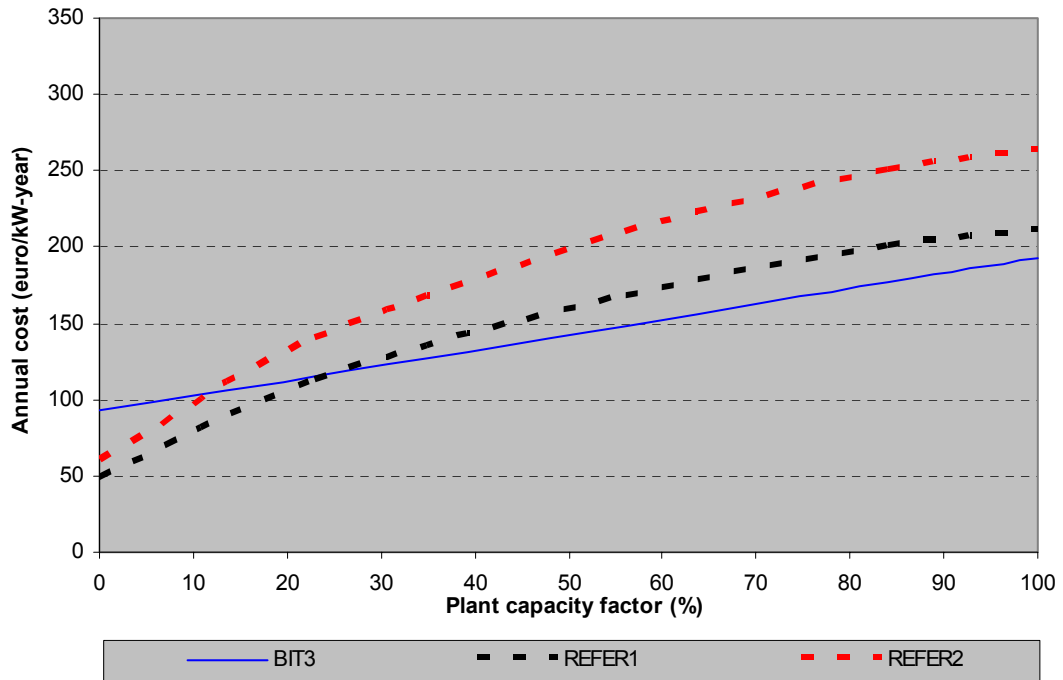




**Figure A9.24 Year 2018 Rehabilitation Versus Benchmark Curves**



**Figure A9.25 Year 2020 Rehabilitation Versus Benchmark Curves**





## A9.5 Computation of Net Present Value of Plants to be Rehabilitated

The net present value of investments in rehabilitation was computed in a separate spreadsheet since it was not possible to include them in the VARSYS module of WASP. The results are summarized in Table A9.2 and details are shown in Tables A9.3 through A9.6. Since the analysis ended in 2020, a salvage value was computed to reflect the remaining economic life of the units. This salvage value was deducted from the present value of investments to compute the net present value. A discount rate of 10 percent was used and all rehabilitated units were assumed to have an extended economic life of 15 years.

The calculation of the rehabilitation NPV is based on the following formulae:

### NPV = DI-DS with

DI = Discounted TPPs Rehabilitation Investment Cost

DS = Discounted Salvage Value

$$DI = I \times (1 + i)^{t-1}$$

Where:

**DI:** Discounted TPPs Rehabilitation Investment Costs

**I:** TPPs Rehabilitation Investment Costs

**T:** Sequence of Years till the Last Year in Planning Period (1, 2, ...);

**i:** Discount Rate (10%)

and

$$DS = S \times [1 / (1 + i)^M] \text{ with}$$

$$S = I \times \left\{ 1 - \sum_{t=1}^m [i \times (1 + i)^{t-1}] / [(1 + i)^N - 1] \right\}$$

Where:

**S:** Salvage value;

**I:** TPPs Rehabilitation Investment Costs

**M:** Last Year of Planning Period – Year of Commissioning After Rehabilitation + 1 );

**T:** Sequence of Years till the Last Year in Planning Period (1, 2, ...);

**i:** Discount Rate (10%)

**N:** Plant Life after rehabilitation

**M:** Last Year of Planning Period – First Year of Planning Period + 1

As discussed earlier, several cases were analysed. Case 1A uses the rehabilitation programme as proposed by the utilities. In Case 2A1, the plants to be rehabilitated that showed higher costs than the first composite curve (REFER1) were eliminated from the expansion plan. In Case 2A2, the higher composite curve (REFER2) was used as a



screening tool. Case 2B was made using the rehabilitated units selected under Case 2A2 (using the more relaxed benchmark criteria REFER2).

**Table A9.2 Net Present Value of Investments for Plants Planned for Rehabilitation**

	Total Capacity (MW)	Net Present Value (Million Euros)
Case 1	11,574	4,121
Case 2A1	6,105	807
Case 2A2	9,916	3,584
Case 2B	9,916	3,494



**Table A9.3 Computation of Case1A NPV for Plants Planned for Rehabilitation**

Jurisdiction	TPP Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
Albania	TPP Fier Czech	11.2	10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.3	0.0	21.3
	TPP Fier China	6.0	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.4	0.0	11.4
	<b>Total</b>	<b>17.1</b>	<b>15.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>32.7</b>	<b>0.0</b>	<b>32.7</b>
B&H	Gacko	-	-	-	95.3	-	-	-	-	-	-	-	-	-	-	-	-	95.3	6.3	89.0
	Ugljevik	-	-	-	-	-	77.3	-	-	-	-	-	-	-	-	-	-	77.3	11.3	66.0
	Tuzla 5	44.8	40.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.4	0.0	85.4
	Tuzla 6	-	42.7	38.8	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4	2.4	79.0
	Kakanj 6	-	-	35.3	-	-	-	-	-	-	-	-	-	-	-	-	-	35.3	1.1	34.1
	<b>Total</b>	<b>44.8</b>	<b>83.3</b>	<b>74.0</b>	<b>95.3</b>	<b>0.0</b>	<b>77.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>374.7</b>	<b>21.1</b>	<b>353.6</b>
Bulgaria	TPP Maritsa East 3 Unit 1	-	248.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248.8	0.0	248.8
	TPP Maritsa East 3 Unit 2	273.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273.7	0.0	273.7
	TPP Maritsa East 3 Unit 3	121.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121.1	0.0	121.1
	TPP Maritsa East 3 Unit 4	-	-	121.1	-	-	-	-	-	-	-	-	-	-	-	-	-	121.1	3.2	118.0
	TPP Maritsa East 2 Unit 1	80.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.3	0.0	80.3
	TPP Maritsa East 2 Unit 2	-	73.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73.0	0.0	73.0
	TPP Maritsa East 2 Unit 3	-	-	66.4	-	-	-	-	-	-	-	-	-	-	-	-	-	66.4	2.1	64.3
	TPP Maritsa East 2 Unit 4	-	-	-	60.3	-	-	-	-	-	-	-	-	-	-	-	-	60.3	4.0	56.3
	TPP Maritsa East 2 Unit 5	-	-	-	-	85.1	-	-	-	-	-	-	-	-	-	-	-	85.1	8.9	76.3
	TPP Maritsa East 2 Unit 6	-	-	-	93.6	-	-	-	-	-	-	-	-	-	-	-	-	93.6	6.2	87.4
	TPP Bobov Dol 1	-	-	-	-	78.7	-	-	-	-	-	-	-	-	-	-	-	78.7	8.2	70.5
	TPP Bobov Dol 2	-	-	-	-	-	71.5	-	-	-	-	-	-	-	-	-	-	71.5	10.4	61.1
	TPP Bobov Dol 3	-	-	-	-	-	-	65.0	-	-	-	-	-	-	-	-	-	65.0	12.5	52.5
	TPP Varna 1	-	-	-	-	77.1	-	-	-	-	-	-	-	-	-	-	-	77.1	8.0	69.0
	TPP Varna 2	-	-	-	-	-	72.4	-	-	-	-	-	-	-	-	-	-	72.4	10.6	61.8
	TPP Varna 3	-	-	-	-	-	-	65.8	-	-	-	-	-	-	-	-	-	65.8	12.6	53.2
	TPP Varna 4	-	-	-	-	-	-	-	58.5	-	-	-	-	-	-	-	-	58.5	14.2	44.3
	TPP Varna 5	-	-	-	-	-	-	-	-	52.6	-	-	-	-	-	-	-	52.6	15.7	36.9
	TPP Varna 6	-	-	-	-	-	-	-	-	-	47.9	-	-	-	-	-	-	47.9	17.2	30.6
	TPP Ruse 1	-	-	-	-	12.5	-	-	-	-	-	-	-	-	-	-	-	12.5	1.3	11.2
	TPP Ruse 2	-	-	-	-	-	11.3	-	-	-	-	-	-	-	-	-	-	11.3	1.7	9.7
TPP Ruse 3	45.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.9	0.0	45.9	
TPP Ruse 4	-	-	-	31.3	-	-	-	-	-	-	-	-	-	-	-	-	31.3	2.1	29.3	
TPP Ruse 5	-	-	-	-	-	-	10.6	-	-	-	-	-	-	-	-	-	10.6	2.0	8.6	
TPP Ruse 6	-	-	-	-	-	-	-	10.1	-	-	-	-	-	-	-	-	10.1	2.5	7.6	
<b>Total</b>	<b>521.0</b>	<b>321.8</b>	<b>187.5</b>	<b>185.3</b>	<b>253.3</b>	<b>155.2</b>	<b>141.4</b>	<b>68.6</b>	<b>52.6</b>	<b>47.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1934.7</b>	<b>143.3</b>	<b>1797.3</b>	
Croatia																				
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Macedonia																				
	Bitola 1	-	-	-	-	-	-	-	24.4	22.1	-	-	-	-	-	-	-	46.5	15.9	30.6
	Bitola 2	-	-	-	-	-	-	-	-	-	20.1	18.3	-	-	-	-	-	38.4	18.4	20.1
	Bitola 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.2	-	27.2	21.0	6.2
	Negotino	-	-	-	-	37.2	33.8	-	-	-	-	-	-	-	-	-	-	70.9	9.9	61.1
	Oslomej	-	-	-	-	-	-	15.4	14.0	-	-	-	-	-	-	-	-	29.3	6.8	22.5
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>37.2</b>	<b>33.8</b>	<b>15.4</b>	<b>14.0</b>	<b>24.4</b>	<b>22.1</b>	<b>20.1</b>	<b>18.3</b>	<b>0.0</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>212.4</b>	<b>72.0</b>	<b>140.4</b>	



**Table A9.3 Computation of Case1A NPV for Plants Planned for Rehabilitation (continuation)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
<b>Montenegro</b>																			
TPP Pljevlja	-	-	-	-	-	51.8	-	-	-	-	-	-	-	-	-	-	51.8	7.6	44.3
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>7.6</b>	<b>44.3</b>
<b>Romania</b>																			
Turceni Unit 3	-	-	-	73.4	66.8	-	-	-	-	-	-	-	-	-	-	-	140.2	13.9	126.3
Turceni Unit 5	23.5	21.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.8	0.0	44.8
Turceni Unit 6	-	-	80.8	73.4	-	-	-	-	-	-	-	-	-	-	-	-	154.2	9.7	144.5
Rovinari Unit 3	-	78.2	71.1	-	-	-	-	-	-	-	-	-	-	-	-	-	149.3	4.5	144.8
Rovinari Unit 5	-	-	-	-	60.7	55.2	-	-	-	-	-	-	-	-	-	-	115.9	16.1	99.8
Isalnita Unit 7	-	-	70.4	64.0	-	-	-	-	-	-	-	-	-	-	-	-	134.4	8.5	125.9
Paroseni Unit 4	-	-	-	55.2	-	-	-	-	-	-	-	-	-	-	-	-	55.2	3.6	51.6
Galati Unit 3	-	-	21.5	-	-	-	-	-	-	-	-	-	-	-	-	-	21.5	0.7	20.9
Galati Unit 5	-	-	-	-	-	-	-	13.4	-	-	-	-	-	-	-	-	13.4	3.2	10.1
Galati Unit 6	-	-	-	-	-	-	-	-	12.2	-	-	-	-	-	-	-	12.2	3.6	8.5
Galati Unit 4	-	-	-	-	10.7	-	-	-	-	-	-	-	-	-	-	-	10.7	1.1	9.6
Deva Unit 1	-	117.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	117.1	0.0	117.1
Deva Unit 2	-	-	106.	5	-	-	-	-	-	-	-	-	-	-	-	-	106.5	3.4	103.1
Deva Unit 4	-	-	-	-	88.0	-	-	-	-	-	-	-	-	-	-	-	88.0	9.2	78.8
<b>Total</b>	<b>23.5</b>	<b>216.7</b>	<b>350.3</b>	<b>266.1</b>	<b>226.2</b>	<b>55.2</b>	<b>0.0</b>	<b>13.4</b>	<b>12.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1163.5</b>	<b>77.5</b>	<b>1086.0</b>
<b>Serbia</b>																			
Nikola TeslaA1	-	-	-	-	69.1	-	-	-	-	-	-	-	-	-	-	-	69.1	7.2	61.9
Nikola TeslaA2	-	-	-	-	-	62.8	-	-	-	-	-	-	-	-	-	-	62.8	2.6	60.2
Nikola TeslaA4	-	98.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98.1	0.0	98.1
Nikola TeslaA6	-	-	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	89.1	2.8	86.3
Nikola TeslaB1	-	-	-	-	-	-	137.8	-	-	-	-	-	-	-	-	-	137.8	26.5	111.3
Nikola TeslaB2	-	-	-	-	-	-	-	113.9	-	-	-	-	-	-	-	-	113.9	34.0	79.9
KostolacA1	-	40.0	-	-	-	-	-	9	-	-	-	-	-	-	-	-	40.0	0.0	40.0
KostolacB1	-	-	-	-	-	-	-	-	-	-	52.3	-	-	-	-	-	52.3	22.4	30.0
KostolacB2	-	-	-	-	-	-	-	-	-	-	-	-	43.3	-	-	-	43.3	25.2	18.0
Novi Sad1	32.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.1	0.0	32.1
Novi Sad2	-	26.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.2	0.0	26.2
Zrenjanin	28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.9	0.0	28.9
<b>Total</b>	<b>60.9</b>	<b>164.3</b>	<b>89.1</b>	<b>0.0</b>	<b>69.1</b>	<b>62.8</b>	<b>137.8</b>	<b>0.0</b>	<b>113.9</b>	<b>0.0</b>	<b>52.3</b>	<b>0.0</b>	<b>43.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>793.6</b>	<b>120.7</b>	<b>672.9</b>
<b>Unmik</b>																			
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>S.E.E.</b>																			
<b>Total</b>	<b>667.3</b>	<b>801.7</b>	<b>701.0</b>	<b>546.7</b>	<b>585.8</b>	<b>436.2</b>	<b>294.6</b>	<b>95.9</b>	<b>203.1</b>	<b>70.0</b>	<b>72.5</b>	<b>18.3</b>	<b>43.3</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>4563.5</b>	<b>442.3</b>	<b>4121.2</b>



**Table A9.4 Computation of Case2A1 NPV for Plants Planned for Rehabilitation**

Jurisdiction	TPP Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
Albania	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B&H	Tuzla 5	44.75	40.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.43	0.00	85.43
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.4	0.0	85.4
Bulgaria	TPP Maritsa East 2 Unit 2	-	73.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73.00	0.00	73.00
	TPP Maritsa East 2 Unit 3	-	-	66.37	-	-	-	-	-	-	-	-	-	-	-	-	-	66.37	2.09	64.28
	TPP Maritsa East 2 Unit 4	-	-	-	60.33	-	-	-	-	-	-	-	-	-	-	-	-	60.33	3.99	56.35
	TPP Varna 1	-	-	-	-	77.08	-	-	-	-	-	-	-	-	-	-	-	77.08	8.03	69.05
	TPP Varna 2	-	-	-	-	-	72.38	-	-	-	-	-	-	-	-	-	-	72.38	10.57	61.81
	TPP Varna 3	-	-	-	-	-	-	65.8	-	-	-	-	-	-	-	-	-	65.8	12.6	53.2
	TPP Varna 4	-	-	-	-	-	-	-	58.5	-	-	-	-	-	-	-	-	58.5	14.2	44.3
	TPP Varna 5	-	-	-	-	-	-	-	-	52.6	-	-	-	-	-	-	-	52.6	15.7	36.9
	TPP Varna 6	-	-	-	-	-	-	-	-	-	47.9	-	-	-	-	-	-	47.9	17.2	30.6
	TPP Ruse 4	-	-	-	31.3	-	-	-	-	-	-	-	-	-	-	-	-	31.3	2.1	29.3
	Total	0.0	0.0	0.0	31.3	0.0	0.0	65.8	58.5	52.6	47.9	0.0	0.0	0.0	0.0	0.0	0.0	605.3	86.5	518.8
Croatia	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Macedonia	Bitola 1	-	-	-	-	-	-	-	-	24.4	22.1	-	-	-	-	-	-	46.5	15.9	30.6
	Bitola 2	-	-	-	-	-	-	-	-	-	-	20.1	18.3	-	-	-	-	38.4	18.4	20.1
	Bitola 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.2	-	27.2	21.0	6.2
	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.4	22.1	20.1	18.3	0.0	0.0	27.2	0.0	112.2	55.3	56.8
Montenegro	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	Turceni Unit 5	23.5	21.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.8	0.0	44.8
	Turceni Unit 6	-	-	80.8	73.4	-	-	-	-	-	-	-	-	-	-	-	-	154.2	9.7	144.5
	Total	23.5	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	199.0	9.7	189.3
Serbia	Nikola TeslaA1	-	-	-	-	69.1	-	-	-	-	-	-	-	-	-	-	-	69.1	7.2	61.9
	Nikola TeslaA2	-	-	-	-	-	62.8	-	-	-	-	-	-	-	-	-	-	62.8	2.6	60.2
	Nikola TeslaA4	-	98.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98.1	0.0	98.1
	Nikola TeslaA6	-	-	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	89.1	2.8	86.3
	Nikola TeslaB1	-	-	-	-	-	-	137.8	-	-	-	-	-	-	-	-	-	137.8	26.5	111.3
	Nikola TeslaB2	-	-	-	-	-	-	-	113.9	-	-	-	-	-	-	-	-	113.9	34.0	79.9
	KostolacB1	-	-	-	-	-	-	-	-	-	52.3	-	-	-	-	-	-	52.3	22.4	30.0
	KostolacB2	-	-	-	-	-	-	-	-	-	-	-	43.3	-	-	-	-	43.3	25.2	18.0
	Total	0.0	98.1	89.1	0.0	69.1	62.8	137.8	0.0	113.9	0.0	52.3	0.0	43.3	0.0	0.0	0.0	666.4	120.7	545.7
Unmik	Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S.E.E.	Total	23.5	119.4	89.1	31.3	69.1	62.8	203.6	58.5	190.9	70.0	72.5	18.3	43.3	0.0	27.2	0.0	1079.5	272.3	807.2


**Table A9.5 Computation of Case2A2 NPV for Plants Planned for Rehabilitation**

Jurisdiction	TPP Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
<i>Albania</i>	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<i>B&amp;H</i>																				
	Tuzla 5	44.8	40.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.4	0.0	85.4
	Tuzla 6	-	42.7	38.8	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4	2.4	79.0
	Kakanj 6	-	-	35.3	-	-	-	-	-	-	-	-	-	-	-	-	-	35.3	1.1	34.1
	<b>Total</b>	<b>44.8</b>	<b>83.3</b>	<b>74.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>202.1</b>	<b>3.6</b>	<b>198.6</b>
<i>Bulgaria</i>																				
	TPP Maritsa East 3 Unit 1	-	248.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248.8	0.0	248.8
	TPP Maritsa East 3 Unit 2	273.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273.7	0.0	273.7
	TPP Maritsa East 3 Unit 3	121.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121.1	0.0	121.1
	TPP Maritsa East 3 Unit 4	-	-	121.1	-	-	-	-	-	-	-	-	-	-	-	-	-	121.1	3.2	118.0
	TPP Maritsa East 2 Unit 1	80.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.3	0.0	80.3
	TPP Maritsa East 2 Unit 2	-	73.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73.0	0.0	73.0
	TPP Maritsa East 2 Unit 3	-	-	66.4	-	-	-	-	-	-	-	-	-	-	-	-	-	66.4	2.1	64.3
	TPP Maritsa East 2 Unit 4	-	-	-	60.3	-	-	-	-	-	-	-	-	-	-	-	-	60.3	4.0	56.3
	TPP Maritsa East 2 Unit 5	-	-	-	-	85.1	-	-	-	-	-	-	-	-	-	-	-	85.1	8.9	76.3
	TPP Maritsa East 2 Unit 6	-	-	-	93.6	-	-	-	-	-	-	-	-	-	-	-	-	93.6	6.2	87.4
	TPP Bobov Dol 1	-	-	-	-	78.7	-	-	-	-	-	-	-	-	-	-	-	78.7	8.2	70.5
	TPP Bobov Dol 2	-	-	-	-	-	71.5	-	-	-	-	-	-	-	-	-	-	71.5	10.4	61.1
	TPP Bobov Dol 3	-	-	-	-	-	-	65.0	-	-	-	-	-	-	-	-	-	65.0	12.5	52.5
	TPP Varna 1	-	-	-	-	77.1	-	-	-	-	-	-	-	-	-	-	-	77.1	8.0	69.0
	TPP Varna 2	-	-	-	-	-	72.4	-	-	-	-	-	-	-	-	-	-	72.4	10.6	61.8
	TPP Varna 3	-	-	-	-	-	-	65.8	-	-	-	-	-	-	-	-	-	65.8	12.6	53.2
	TPP Varna 4	-	-	-	-	-	-	-	58.5	-	-	-	-	-	-	-	-	58.5	14.2	44.3
	TPP Varna 5	-	-	-	-	-	-	-	-	52.6	-	-	-	-	-	-	-	52.6	15.7	36.9
	TPP Varna 6	-	-	-	-	-	-	-	-	-	47.9	-	-	-	-	-	-	47.9	17.2	30.6
	TPP Ruse 3	45.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.9	0.0	45.9
	TPP Ruse 4	-	-	-	31.3	-	-	-	-	-	-	-	-	-	-	-	-	31.3	2.1	29.3
	TPP Ruse 5	-	-	-	-	-	-	10.6	-	-	-	-	-	-	-	-	-	10.6	2.0	8.6
	TPP Ruse 6	-	-	-	-	-	-	-	10.1	-	-	-	-	-	-	-	-	10.1	2.5	7.6
	<b>Total</b>	<b>521.0</b>	<b>321.8</b>	<b>187.5</b>	<b>185.3</b>	<b>240.9</b>	<b>143.9</b>	<b>141.4</b>	<b>68.6</b>	<b>52.6</b>	<b>47.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1910.9</b>	<b>140.4</b>	<b>1770.5</b>
<i>Croatia</i>																				
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<i>Macedonia</i>																				
	Bitola 1	-	-	-	-	-	-	-	24.4	22.1	-	-	-	-	-	-	-	46.5	15.9	30.6
	Bitola 2	-	-	-	-	-	-	-	-	-	20.1	18.3	-	-	-	-	-	38.4	18.4	20.1
	Bitola 3	-	-	-	-	-	-	-	-	-	-	-	-	-	27.2	-	-	27.2	21.0	6.2
	Negotino	-	-	-	-	37.2	33.8	-	-	-	-	-	-	-	-	-	-	70.9	9.9	61.1
	Osiomej	-	-	-	-	-	-	15.4	14.0	-	-	-	-	-	-	-	-	29.3	6.8	22.5
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>37.2</b>	<b>33.8</b>	<b>15.4</b>	<b>14.0</b>	<b>24.4</b>	<b>22.1</b>	<b>20.1</b>	<b>18.3</b>	<b>0.0</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>212.4</b>	<b>72.0</b>	<b>140.4</b>


**Table A9.5 Computation of Case2A2 NPV for Plants Planned for Rehabilitation (continuation)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
<b>Montenegro</b>																			
TPP Pljevlja	-	-	-	-	-	51.8	-	-	-	-	-	-	-	-	-	-	51.8	7.6	44.3
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>7.6</b>	<b>44.3</b>
<b>Romania</b>																			
Turceni Unit 3	-	-	-	73.4	66.8	-	-	-	-	-	-	-	-	-	-	-	140.2	13.9	126.3
Turceni Unit 5	23.5	21.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.8	0.0	44.8
Turceni Unit 6	-	-	80.8	73.4	-	-	-	-	-	-	-	-	-	-	-	-	154.2	9.7	144.5
Rovinari Unit 3	-	78.2	71.1	-	-	-	-	-	-	-	-	-	-	-	-	-	149.3	4.5	144.8
Rovinari Unit 5	-	-	-	-	60.7	55.2	-	-	-	-	-	-	-	-	-	-	115.9	16.1	99.8
Isalnita Unit 7	-	-	70.4	64.0	-	-	-	-	-	-	-	-	-	-	-	-	134.4	8.5	125.9
Paroseni Unit 4	-	-	-	55.2	-	-	-	-	-	-	-	-	-	-	-	-	55.2	3.6	51.6
Galati Unit 5	-	-	-	-	-	-	-	13.4	-	-	-	-	-	-	-	-	13.4	3.2	10.1
Galati Unit 4	-	-	-	-	10.7	-	-	-	-	-	-	-	-	-	-	-	10.7	1.1	9.6
<b>Total</b>	<b>23.5</b>	<b>99.5</b>	<b>222.3</b>	<b>266.1</b>	<b>138.2</b>	<b>55.2</b>	<b>0.0</b>	<b>13.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>818.1</b>	<b>60.7</b>	<b>757.4</b>
<b>Serbia</b>																			
Nikola TeslaA1	-	-	-	-	69.1	-	-	-	-	-	-	-	-	-	-	-	69.1	7.2	61.9
Nikola TeslaA2	-	-	-	-	-	62.8	-	-	-	-	-	-	-	-	-	-	62.8	2.6	60.2
Nikola TeslaA4	-	98.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98.1	0.0	98.1
Nikola TeslaA6	-	-	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	89.1	2.8	86.3
Nikola TeslaB1	-	-	-	-	-	-	137.8	-	-	-	-	-	-	-	-	-	137.8	26.5	111.3
Nikola TeslaB2	-	-	-	-	-	-	-	113.9	-	-	-	-	-	-	-	-	113.9	34.0	79.9
KostolacA1	-	40.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40.0	0.0	40.0
KostolacB1	-	-	-	-	-	-	-	-	-	52.3	-	-	-	-	-	-	52.3	22.4	30.0
KostolacB2	-	-	-	-	-	-	-	-	-	-	-	43.3	-	-	-	-	43.3	25.2	18.0
Novi Sad1	32.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.1	0.0	32.1
Novi Sad2	-	26.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.2	0.0	26.2
Zrenjanin	28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.9	0.0	28.9
<b>Total</b>	<b>60.9</b>	<b>164.3</b>	<b>89.1</b>	<b>0.0</b>	<b>69.1</b>	<b>62.8</b>	<b>137.8</b>	<b>0.0</b>	<b>113.9</b>	<b>0.0</b>	<b>52.3</b>	<b>0.0</b>	<b>43.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>793.6</b>	<b>120.7</b>	<b>672.9</b>
<b>Unmik</b>																			
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>S.E.E.</b>																			
<b>Total</b>	<b>650.1</b>	<b>669.0</b>	<b>573.0</b>	<b>451.4</b>	<b>485.3</b>	<b>347.5</b>	<b>294.6</b>	<b>95.9</b>	<b>190.9</b>	<b>70.0</b>	<b>72.5</b>	<b>18.3</b>	<b>43.3</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>3989.0</b>	<b>404.9</b>	<b>3584.1</b>


**Table A9.6 Computation of Case2B NPV for Plants Planned for Rehabilitation**

Jurisdiction	TPP Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
<i>Albania</i>																				
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<i>B&amp;H</i>																				
	Tuzla 5	-	40.7	37.0	-	-	-	-	-	-	-	-	-	-	-	-	-	77.7	0.0	77.7
	Tuzla 6	-	42.7	38.8	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4	2.4	79.0
	Kakanj 6	-	-	35.3	-	-	-	-	-	-	-	-	-	-	-	-	-	35.3	1.1	34.1
	<b>Total</b>	<b>0.0</b>	<b>83.3</b>	<b>111.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>194.3</b>	<b>3.6</b>	<b>190.8</b>
<i>Bulgaria</i>																				
	TPP Maritsa East 3 Unit 1	-	248.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248.8	0.0	248.8
	TPP Maritsa East 3 Unit 2	-	248.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	248.8	0.0	248.8
	TPP Maritsa East 3 Unit 3	-	110.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110.1	0.0	110.1
	TPP Maritsa East 3 Unit 4	-	-	-	110.1	-	-	-	-	-	-	-	-	-	-	-	-	110.1	6.0	104.1
	TPP Maritsa East 2 Unit 1	-	73.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73.0	0.0	73.0
	TPP Maritsa East 2 Unit 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66.4	0.0	66.4
	TPP Maritsa East 2 Unit 3	-	-	66.4	-	-	-	-	-	-	-	-	-	-	-	-	-	66.4	2.1	64.3
	TPP Maritsa East 2 Unit 4	-	-	-	60.3	-	-	-	-	-	-	-	-	-	-	-	-	60.3	4.0	56.3
	TPP Maritsa East 2 Unit 5	-	-	-	-	85.1	-	-	-	-	-	-	-	-	-	-	-	85.1	8.9	76.3
	TPP Maritsa East 2 Unit 6	-	-	-	93.6	-	-	-	-	-	-	-	-	-	-	-	-	93.6	6.2	87.4
	TPP Bobov Dol 1	-	-	-	-	78.7	-	-	-	-	-	-	-	-	-	-	-	78.7	8.2	70.5
	TPP Bobov Dol 2	-	-	-	-	-	71.5	-	-	-	-	-	-	-	-	-	-	71.5	10.4	61.1
	TPP Bobov Dol 3	-	-	-	-	-	-	65.0	-	-	-	-	-	-	-	-	-	65.0	12.5	52.5
	TPP Varna 1	-	-	-	-	77.1	-	-	-	-	-	-	-	-	-	-	-	77.1	8.0	69.0
	TPP Varna 2	-	-	-	-	-	72.4	-	-	-	-	-	-	-	-	-	-	72.4	10.6	61.8
	TPP Varna 3	-	-	-	-	-	-	65.8	-	-	-	-	-	-	-	-	-	65.8	12.6	53.2
	TPP Varna 4	-	-	-	-	-	-	-	58.5	-	-	-	-	-	-	-	-	58.5	14.2	44.3
	TPP Varna 5	-	-	-	-	-	-	-	-	52.6	-	-	-	-	-	-	-	52.6	15.7	36.9
	TPP Varna 6	-	-	-	-	-	-	-	-	-	47.9	-	-	-	-	-	-	47.9	17.2	30.6
	TPP Ruse 3	-	41.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41.7	0.0	41.7
	TPP Ruse 4	-	-	-	31.3	-	-	-	-	-	-	-	-	-	-	-	-	31.3	2.1	29.3
	TPP Ruse 5	-	-	-	-	-	-	10.6	-	-	-	-	-	-	-	-	-	10.6	2.0	8.6
	TPP Ruse 6	-	-	-	-	-	-	-	10.1	-	-	-	-	-	-	-	-	10.1	2.5	7.6
	<b>Total</b>	<b>0.0</b>	<b>722.4</b>	<b>132.7</b>	<b>295.4</b>	<b>240.9</b>	<b>143.9</b>	<b>141.4</b>	<b>68.6</b>	<b>52.6</b>	<b>47.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1845.9</b>	<b>143.2</b>	<b>1702.6</b>
<i>Croatia</i>																				
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<i>Macedonia</i>																				
	Bitola 1	-	-	-	-	-	-	-	24.4	22.1	-	-	-	-	-	-	-	46.5	15.9	30.6
	Bitola 2	-	-	-	-	-	-	-	-	-	20.1	18.3	-	-	-	-	-	38.4	18.4	20.1
	Bitola 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.2	-	27.2	21.0	6.2
	Negotino	-	-	-	-	37.2	33.8	-	-	-	-	-	-	-	-	-	-	70.9	9.9	61.1
	Osiomej	-	-	-	-	-	-	15.4	14.0	-	-	-	-	-	-	-	-	29.3	6.8	22.5
	<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>37.2</b>	<b>33.8</b>	<b>15.4</b>	<b>14.0</b>	<b>24.4</b>	<b>22.1</b>	<b>20.1</b>	<b>18.3</b>	<b>0.0</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>212.4</b>	<b>72.0</b>	<b>140.4</b>


**Table A9.6 Computation of Case2B NPV for Plants Planned for Rehabilitation (continuation)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Disc. Inv. €m	Sal.Val. €m	Total €m
<b>Montenegro</b>																			
TPP Pjjevija	-	-	-	-	-	51.8	-	-	-	-	-	-	-	-	-	-	51.8	7.6	44.3
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>51.8</b>	<b>7.6</b>	<b>44.3</b>
<b>Romania</b>																			
Turceni Unit 3	-	-	-	73.4	66.8	-	-	-	-	-	-	-	-	-	-	-	140.2	13.9	126.3
Turceni Unit 5	23.5	21.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.8	0.0	44.8
Turceni Unit 6	-	-	80.8	73.4	-	-	-	-	-	-	-	-	-	-	-	-	154.2	9.7	144.5
Rovinari Unit 3	-	78.2	71.1	-	-	-	-	-	-	-	-	-	-	-	-	-	149.3	4.5	144.8
Rovinari Unit 5	-	-	-	-	60.7	55.2	-	-	-	-	-	-	-	-	-	-	115.9	16.1	99.8
Isalnita Unit 7	-	-	70.4	64.0	-	-	-	-	-	-	-	-	-	-	-	-	134.4	8.5	125.9
Paroseni Unit 4	-	-	-	55.2	-	-	-	-	-	-	-	-	-	-	-	-	55.2	3.6	51.6
Galati Unit 5	-	-	-	-	-	-	-	13.4	-	-	-	-	-	-	-	-	13.4	3.2	10.1
Galati Unit 4	-	-	-	-	10.7	-	-	-	-	-	-	-	-	-	-	-	10.7	1.1	9.6
<b>Total</b>	<b>23.5</b>	<b>99.5</b>	<b>222.3</b>	<b>266.1</b>	<b>138.2</b>	<b>55.2</b>	<b>0.0</b>	<b>13.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>818.1</b>	<b>60.7</b>	<b>757.4</b>
<b>Serbia</b>																			
Nikola TeslaA1	-	-	-	-	69.1	-	-	-	-	-	-	-	-	-	-	-	69.1	7.2	61.9
Nikola TeslaA2	-	-	-	-	-	62.8	-	-	-	-	-	-	-	-	-	-	62.8	2.6	60.2
Nikola TeslaA4	-	98.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98.1	0.0	98.1
Nikola TeslaA6	-	-	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	89.1	2.8	86.3
Nikola TeslaB1	-	-	-	-	-	-	137.8	-	-	-	-	-	-	-	-	-	137.8	26.5	111.3
Nikola TeslaB2	-	-	-	-	-	-	-	113.9	-	-	-	-	-	-	-	-	113.9	34.0	79.9
KostolacA1	-	-	36.4	-	-	-	-	-	-	-	-	-	-	-	-	-	36.4	1.1	35.2
KostolacB1	-	-	-	-	-	-	-	-	-	-	52.3	-	-	-	-	-	52.3	22.4	30.0
KostolacB2	-	-	-	-	-	-	-	-	-	-	-	-	43.3	-	-	-	43.3	25.2	18.0
Novi Sad1	-	-	26.5	-	-	-	-	-	-	-	-	-	-	-	-	-	26.5	0.8	25.7
Novi Sad2	-	26.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.2	0.0	26.2
Zrenjanin	-	26.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.2	0.8	25.5
<b>Total</b>	<b>0.0</b>	<b>150.5</b>	<b>152.0</b>	<b>0.0</b>	<b>69.1</b>	<b>62.8</b>	<b>137.8</b>	<b>0.0</b>	<b>113.9</b>	<b>0.0</b>	<b>52.3</b>	<b>0.0</b>	<b>43.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>781.8</b>	<b>123.5</b>	<b>658.4</b>
<b>Unmik</b>																			
<b>Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>S.E.E.</b>																			
<b>Total</b>	<b>23.5</b>	<b>1055.8</b>	<b>618.1</b>	<b>561.5</b>	<b>485.3</b>	<b>347.5</b>	<b>294.6</b>	<b>95.9</b>	<b>190.9</b>	<b>70.0</b>	<b>72.5</b>	<b>18.3</b>	<b>43.3</b>	<b>0.0</b>	<b>27.2</b>	<b>0.0</b>	<b>3904.4</b>	<b>410.5</b>	<b>3493.9</b>