



The Charter Quest Institute

## The CFO Case Study Competition 2019



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*Ace in Lan*

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## 1.0 Executive Summary

The Volkswagen AG (VW AG) is the largest multinational automotive manufacturing company in the world based in Germany. Team Ace in Lancaster University will evaluate, prioritise and provide strategic recommendations towards urgent issues for the Board of Directors.

### 1.1 Solution Overview

Scenario	Urgency	Financial Impact	Issue Complexity	Score	Priority
Strategy, Structure and Cost Optimisation	3	5	2	3.3	4
Strategic Sourcing of Cobalt in Africa	4	3	3	3.4	3
E-mobility strategy	5	4	5	4.7	1
Product portfolio rationalisation	2	3	2	2.3	5
Paris Accord and Environmental legislation	5	4	4	4.4	2
Weighting	40%	30%	30%	Out of 5	

### 1.2 Key recommendations

By considering the financial impact, ethical impact, long-term profitability and company's operational and strategic direction, our team make 5 recommendations as follows:

- a. Acquire the supplier to create EVB in the house for e-cars development if agreement with contract suppliers is not reached.
- b. Develop new machine and MEB technology to meet regulations and achieve sustainability
- c. Build good relationship with artisanal mining operator for securing cobalt supply in the short run only
- d. Centralise certain functional units, change segment to 5 global geographical markets/regions
- e. Cease production of potential loss-making models

## 2.0 Situational Analysis (SWOT Analysis)

### STRENGTHS

**Strong brand image extensive brand portfolio**  
Worldwide recognition as the largest automaker by sales, allowing a solid foundation to a large customer base

**Diversification with the widest brand portfolio in the car industry.**

12 brands in 7 EU countries captures the demand of different market segments

**Together-2025 strategy**

Presented the determination to create a sustainable and profitable development, focusing on e-mobility and evaluation of portfolio.

### OPPORTUNITIES

**Global electric vehicle market increase**

Investment in this market helps the company to expand the brand portfolio and strengthen market presence.

**Growing markets in Asian, Europe and South African countries**

Expansion in these countries, esp. China and India with high population to increase sales.

### WEAKNESS

**Diesel emission scandal**

Operational profits are adversely affected, and large sum of penalty is paid.

**Slow public response after the crisis**

Reputational damage is caused, and customer confidence drops

### THREATS

**Limited expertise and low competence in e-mobility development**

Competitors have started engaging in the R&D of e-mobility earlier

**Government regulations and economic environment slow down**

Trade war between China and U.S., Brexit may cause uncertainty in profit projections

## 3.0 Scenario 1 - Strategy, structure and cost optimisation

### 3.1 Situation

VW group needs to ensure sustainable profitability by making strategic decisions. The newly appointed CEO Herbert Diess has suggested the following strategic options:

Strategy 1: Centralising functional units

Strategy 2: Combining brands with new categorization in different regions/ markets

Strategy 3: Focusing on the premium cars segment in the long run

#### Objectives

1. Reduce excessive costs and improve efficiency of the use of resources
2. Maintain long term financial performance and sustainable growth by reaching the target of above 6.75% operating margins

### 3.2 Strategy 1- Valuation of centralising functional units to its Headquarter

This strategy helps to reduce manufacturing and non-manufacturing cost under the assumption that the whole process would be effective in the course of 5 years up till 2022. Given that the cost of capital is 14% and the anticipated saving rate from the study pack, the cost per car is reduced €353 per car (a 1.64% reduction) as shown in Appendix 9.1.

The highest expected saving is 3.2%, with the combination of high saving in costs of sales, medium saving in admin expenses and medium saving in selling costs. This shows that the VW

AG should pay extra attention to the choice and method of saving in costs of sales. Also, it is crucial to uphold the high quality of products and service when actioning this strategy.

When the authority is centralized to a small group of managers, the chances of fraud and scandal increases. Therefore, we suggest the VW AG to assign a manager to monitor all the progress of the centralization and evaluate whether the actions meet the objectives. The VW AG should also provide a clear authority- guidelines and support to its Headquarter staffs (department) in order to develop a better internal control and increase efficiency through cost optimization.

### 3.3 Strategy 2- Valuation of new categorization

This strategy helps to increase overall efficiency by grouping brands into 3 different segments (Volume, Premium, Super-premium) in different global geographical markets. However, this is not a quick and cost-effective option to achieve the objectives.

Benefits	Drawbacks
<ol style="list-style-type: none"> <li>1. Allow the company to implement changes efficiently in line with customer behaviour and cater cultural difference in different markets</li> <li>2. Further reduction in the cost of management and monitoring when departments are combined</li> </ol>	<ol style="list-style-type: none"> <li>1. Misconception or a presentation error may incur. Shareholders and investors may find higher difficulty in figuring VW AG's performance as the 3 segments are not equally distributed in the global market</li> <li>2. Takes time for departments to adapt and alter plans, hence may not yield a notable and positive return</li> <li>3. Human resources may not be utilised according to the local demand, e.g. Overstaffing super-premium staff at places where demand for the category is low</li> </ol>

Considering the drawbacks outweigh the benefits of the strategy, this may be a short term strategy to meet the objectives.

### 3.4 Strategy 3- Valuation of Premium Cars Segment Concentration

For a long-term strategy, the Management Board had a discussion on whether or not to focus on only Premium Cars Segment in achieving the targeted operating margin. If the volume segment is excluded, the estimated operating margin will increase 2.45% and the operating profit will decrease €2961 million as shown in Figure 1.

Segments	Operating profit margin	Operating profit
Volume, premium and super-premium segment	6.75%	16,606
Premium and super-premium segment	9.2%	13,645

Figure 1

Although there is a loss in operating profit for this action, the VW AG could earn a profit by selling the shares of the volume segment. This is linked in Section 4 and will be discussed further.

### 3.5 Recommendation

Considering the direct impacts on stakeholders such as customers and investors, Strategy 1 is the best option in the short run. Strategy 3 may be adopted in the long run, but this depends on further market research.

## 4.0 Scenario 2 - Strategic sourcing of cobalt in Africa

### 4.1 Situation

As the VW AG recently failed to negotiate with major mining companies to secure supply of cobalt, VW AG is reaching an agreement from artisanal mining operators in the Republic of Congo (DRC) for direct cobalt.

#### Objective:

1. Secure the cobalt supply without breaking any laws

### 4.2 Trend

In 2018, there is a shortage of supply for cobalt and cobalt price rises as the mining giants in DRC cannot satisfy the market. As a result, artisanal mining operators in the DRC has risen 20% from the beginning in 2018. However, they may be forced to leave the industry if there is no excessive demand in the market. VW AG should not disregard to this matter when negotiating direct cobalt supply from them.

### 4.3 Recommendation

We suggest VW AG to take advantage of developing a good relationship with cobalt suppliers from artisanal mining operators in the DRC now in order to secure the company's supply needs in the short run. At the same time, we need to develop a good supply chain management with the following aspects:

#### Short run (1-2 years)

##### (i) Ordering

We suggest VW AG to negotiate a stable contract with cobalt suppliers (eg. 2-year with break clause), make sure the suppliers can secure enough supply for our uses. Forecasting report of cobalt demand can be provided to help the suppliers make plan and decisions.

##### (ii) Control

VW AG should monitor working conditions regularly and give guidelines for suppliers to avoid any inappropriate actions (eg. child labour, environmental pollution).

##### (iii) Corporate Social Responsibility

VW AG should offer minimum wage and promote good business ethic in Rwanda through news and updates on social media (eg. Facebook, Instagram and Twitter). This helps to reduce society's doubt on illegal operation, hence, build trust and reputation for the company.

### 4.4 Risk and mitigation

There is a huge risk of losing operators when the supply of traditional mining companies has met the demand of the market in the foreseeable future. It is important for VW AG to work on the following aspects in the long run:

## Long run (3-5 years)

### (i) Understand the cobalt market

We suggest VW AG to conduct market research in order to make sure this plan meets the company and the Congolese needs as past experience suggested that the Volkswagen South Africa misread the market in the VW Up! Campaign. Tracking the source with blockchain technology may be used to increase transparency in supply chain.

### (ii) Provide support to artisanal mining operators

For securing a good quality and quantity of cobalt, VW AG should build a better relationship with the artisanal operators. Providing training and safety equipment including safety guides and gear would help to build trust with the operators.

### (iii) Contingency plan

VW AG should continue to negotiate with the DRC's giant mining operators and secure strategic options for developing alternatives (eg. start a business and employ the current artisanal operators.)

## 5.0 E-Mobility Strategy

### 5.1 Situation

E-Mobility is one of the sub-component in 'Strategy 2025'. VW AG is planning to increase its electric-powered cars selling and production. The development and manufacturing of the Electric Vehicle Battery (EVB) become the biggest problem for the VW AG E-mobility Strategy. The fixed 5-year sole supplier contract for EVBs with Panasonic will come to the end very soon, the VW AG are required to choose the best way for developing and producing the EVB.

#### Objectives:

1. Meet the demand of the potential e-car market
2. Increase competitiveness in the market through quality

### 5.2 Choice of EVB supplier

If VW AG continues to use the original method for the EVB, which is signing contract with suppliers, the following table shows the decision criteria for choosing the best EVB supplier.

Therefore, we suggest VW AG to take advantage of the short term contract by selecting Supplier 2 and looking out for other opportunities for a better deal at the same time ( better quality of the battery at the same cost or lower). If there is no better alternatives, Supplier 4 can be the a long term contract supplier.

	Decision criteria	S1	S2	S3	S4
<b>Location of Plant</b>	1. Increase diversification 2. Closer to target market	+			
<b>Length and nature of contract</b>	1. No break clause (allows higher flexibility if there is any changes in supplier) 2. Apply Just-in-time (JIT) (reduce capacity for storage)			×	+
<b>Quality of production</b> <b>Battery range before recharging is required (per km)</b> <b>Battery lifespan (per km)</b> <b>Battery lifespan (years)</b>	1. Higher quality than average (eg. average battery range= 120 km ) 2. Becomes more competitive	+		+	+
<b>Max capacity per annum (million units)</b>	1. Meet the growing demand of the e-car market 2. Ability to meet the production goal	×	+	×	
<b>Shipping and transport cost per € Average cost per unit (=as quoted to VW AG) in €</b>	1. Lower Cost 2. Prevent negative impact from exchange rate and current political situation (e.g. Brexit)		+		
	<b>Expected Score</b>	<b>65%</b>	<b>70%</b>	<b>35%</b>	<b>70%</b>

× 0%  25%  50%  75% + 100%

S1 = Panasonic  
 S2 = Supplier 2  
 S3 = Supplier 3  
 S4 = Supplier 4

### 5.3 EVB development alternatives analysis

Apart from finding EVB supplier, there are 7 alternatives and the following table shows the score for the options from the decision criteria of different factors (A-J).

	1. Make	2. Acquire	3. Partner	4. Outsource	5. Contract	6. License	7. Reference
<b>Total score</b>	18	21	18	11	10	7	-9

Factors	Analysis	Score
<b>A. Centrality to the whole product</b>	<ol style="list-style-type: none"> <li>The quality of the e-cars depends heavily on the quality of the EVB and the whole product cannot be sold without the battery</li> <li>The EVB costs more than half of the whole e-cars</li> </ol>	<b>3</b>
<b>B. Critical to performance</b>	<ol style="list-style-type: none"> <li>The quality of EVB can differentiate from its competitors</li> <li>It is the key in marketing e-car</li> <li>Safety concern would arise if the EVB has technical issues or created with a poor quality</li> </ol>	<b>3</b>
<b>C. 3rd party capabilities</b>	<ol style="list-style-type: none"> <li>Higher bargaining power would help VW AG to develop their own EVB with other companies to achieve their production goal.</li> <li>It is important for other companies to complete the development of the EVB in order to produce the e-cars by VW AG or another company</li> <li>Will affect the function of the EVB, no matter what solution or direction of the VW AG, the company may still achieve the objectives, but it is still important.</li> </ol>	<b>2</b>
<b>D. Development independence</b>	<ol style="list-style-type: none"> <li>The rest of the whole product can be developed whilst developing EVB by VW AG</li> <li>But the development independence will not affect the function of the EVB.</li> </ol>	<b>2</b>
<b>E. Internal competency</b>	<ol style="list-style-type: none"> <li>Lack of previous experience and skills gap of existing employees refrain the development of EVB</li> <li>Can employ professionals if necessary.</li> </ol>	<b>1</b>
<b>F. Confidentiality</b>	<ol style="list-style-type: none"> <li>Avoid losing competitive advantages of the product.</li> <li>Retain the value of the development for longer period of time</li> </ol>	<b>3</b>
<b>G. Complementor availability</b>	<ol style="list-style-type: none"> <li>If no companies can deliver the expected quality, VW AG needs to create on its own</li> <li>The choices for external production are restricted, so the limitations of the situation is crucial for choosing the option.</li> </ol>	<b>2</b>
<b>H. Customer ownership</b>	<ol style="list-style-type: none"> <li>VW AG will identify the customers wants for product development (which serve their needs) in the future</li> <li>Important to attract new and remain existing customers to add value to our brand, but its impact is limited in the short run.</li> </ol>	<b>2</b>



<b>I. Time to market</b>	1. VW AG should find the best timing for the model to enter into market and follow the market trend	<b>1</b>
<b>J. Price sensitivity</b>	1. This would affect the willingness and incentive for VW AG to develop the EVB, so it would affect the involvement of the business.	<b>2</b>

### 5.4 Recommendation

We suggest VW AG to “Acquire” one of the suppliers (Panasonic, S1, S2, S3) as an alternative to maintain the contract relationship.

- Need to seize the opportunity of the e-cars market trend whilst develop the company’s expertise in e-mobility

However, it would return to the problem of which one is the best supplier.

- Huge risk and a high cost when misled by information gap

Therefore, VW AG should also consider the option of “Make” or “Partner” instead.

## 6.0 Scenario 4: Product portfolio rationalisation

### 6.1 Situation

As mentioned in Section 3.4, VW AG supervisory board plan to re-organize the product portfolio for improving its competitiveness. Past performance shows that some of the brands in Volume Segment cannot provide significant value contribution to the group, which leads whether VW AG should reduce the price of cars in Volume Segment and cease production for unprofitable brands.

#### Objectives:

1. To remain and improve competitiveness when VW AG faces the uncertainties and new market trend.
2. To unlock the “hidden value” of the company

### 6.2 Strategy 1- Reduce the Price

We do not suggest this strategy based on the following reasons:

#### (i) Inelastic demand for Volume Car Segment market

- Major reason for people to buy the cars in Volume Segment is the necessity of their livelihood.
- Very limited incentive for buying cars in Volume Segment if price is reduced
- Inelastic demand for Volume Car Segment market may reduce total revenue.

Therefore, It is not worthy for VW AG to take this risk for achieving the objectives.

#### (ii) Expected value/ utility of the car

Reducing car prices gives the impression of lower quality and expected sales performance of the cars are not met, this may hurt the brand’s reputation and expansion in the e-mobility market.

### 6.3 Strategy 2- Cease Production for Unprofitable Brand

Volume segment car brands(million)	Sales Revenue	Car Sales	Operating Profit	Operating profit margin
VW Passenger Car	79979	3573	3301	4.1%
Skoda	16559	937	1611	9.7%
SEAT	9892	595	191	1.9%
VW Commercial	11909	498	853	7.2%

Although SEAT has the lowest operating profit among the 4 brands, it has the fastest growth in the market. Therefore, we suggest ceasing only Mii and Toedo models which has lower sales unit than 2016 (as shown in the 2017 annual report). Considering the high potential of profits of SEAT in the future market, we suggest reducing production for VW Passenger and Commercial Cars.

### 6.3 Recommendation

We recommend Strategic 2 as it has limited impact on current missions and objectives. Hence, brand history and image of VW AG can be maintained as the perception of the quality will not be affected.

## 7.0 Scenario 5: Paris Accord and Environmental legislation

### 7.1 Situation

As a new wave of emission regulations in the West as well as in China and Asian countries begin from 1 January 2019, whether or not VW AG's cars meet the regulation become the major concern. In fact, only a few VW AG's cars are below the regulation limit. There is a question on whether VW AG should develop a new engine and the modular electric drive matrix (MEB) technology within next 8 months for not violating the regulation and paying the penalty.

#### Objectives:

1. To achieve a long term sustainability and meet the new regulation

### 7.2 Evaluation

Figure 2 shows the net benefit or loss for the 3 options from different year. Detail calculation has shown in Appendix 9.2. We used 2018 as the base year, the total net benefit or loss are calculated as the present value in 2018.

		Option 1	Option 2	Option 3
<b>Net Benefit/ Loss</b>	<b>Year 0 (2018)</b>	<b>-19500</b>	<b>-11750</b>	<b>0</b>
	<b>Year 1 (2019)</b>	<b>1535.087719</b>	<b>1008.77193</b>	<b>-87.719298</b>
	<b>Year 2 (2020)</b>	<b>1481.224992</b>	<b>1019.544475</b>	<b>-73.022468</b>
	<b>Year 3 (2021)</b>	<b>1429.252186</b>	<b>1024.269276</b>	<b>-60.57733</b>
	<b>Year 4 (2022)</b>	<b>1379.102986</b>	<b>1023.85482</b>	<b>-50.056485</b>
	<b>Year 5 and afterward</b>	<b>10236.25698</b>	<b>7839.170838</b>	<b>-316.75796</b>
	<b>Total (in million)</b>	<b>-3439.07514</b>	<b>165.6113389</b>	<b>-588.13355</b>

- Option 1 = Develop new engine and MEB technology
- Option 2 = Use existing engine and develop MEB technology
- Option 3 = Use existing engine and without any development

### 7.3 Recommendation

Although it may seem that VW AG will be better off using engine without any development (as reflected in the changes cash flow in present value), other impacts should also be considered to face core weakness and threats of regulations.

- Brand image and goodwill will be further damaged and reflect the company did not make improvements from the previous scandal
- Corporate social responsibility: As the largest producer of cars by sales, the company should take the responsibility of reducing carbon footprints and lead the industry to more environmentally friendly practices.
- Opportunity to license the MEB technology can be a positive indicator to investors
- Can use as product differentiation in promotions and publications
- Meet the aim of greener engines and sustainable profitability in Strategy 2025

As a result, we suggest Option 1 as the best option as the other impacts are more critical than simply monetary loss.

### 8.0 Conclusion

The strategic evaluation, recommendation and implementation plans have addressed relevant factors regarding to VW AG's current concerns. We recommend prioritizing the strategies in the following order (i) E-Mobility Strategy, (ii) Paris Accord and Environment Legislation, (iii) Strategy Sourcing of Cobalt in Africa, (iv) Strategy, Structure and Cost Optimization and (v) Product Portfolio Rationalisation in order to achieve of meeting the goals base on urgency, impact on reputation and SWOT analysis.

## 9.0 Appendix

### 9.1 Scenario 1: Strategy 1

	2013 Actual	2014 Actual	2015 Forecast	2016 Actual	2017 Actual	2018 Forecast	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
<b>Cost per car when centralization does not made = €21575</b>										
Euro (million)	161407	165934	179382	176270	188140	198500	201643.178	211548.487	221226.686	230784.975
Cost of sales*	7336	8254	9600	7336	8254	9600	9164.7472	9614.94669	10054.8239	10489.2513
Admin expenses*	22700	22710	23442	22700	22710	23442	28358.7461	29751.8116	31112.9366	32457.1979
Selling Cost *	191443	196898	212424	206306	219104	231542	239166.671	250915.245	262394.446	273731.425
Total cost	9728000	10217000	10010000	10391000	10777000	11100000	11488062	11878638	12270843	12687686
Car Sales (ref. report p.27)	19679.5847	19271.6061	21221.17882	19854.29699	20330.70428	20859.6396	20818.7135	21123.2336	21383.5713	21574.5743
Cost per Car in Euro	0.59208028	0.67497152	0.769467528	0.877192982	1	1.14	1.22996	1.481544	1.68896016	1.92541458
Discounting rate (14%)	11651.894	13007.7852	16329.00802	17416.04999	20330.70428	23779.9892	27056	31295	36116	41540
Present Value (Cost per car)										
<b>Total Cost per car</b>										
3 points moving average	13662.89574	15584.28108	18025.2541	20508.9145	23722.2312	27376.9964	31489			
Percentage change	14.0628%	15.6630%	13.7788%	15.6679%	15.4065%	15.0199%				
<b>Number of car sales</b>										
3 points moving average	9985000	10206000	10392666.67	10756000	11121687.3	11488900	11879181			
Percentage change	2.2133%	1.8290%	3.4961%	3.3998%	3.3018%	3.3970%				

\* Forecasting amount is based on the 2017's proportion, which is: 84.31% Cost of sales, 3.83% Admin expense, 11.86% Selling cost

#### Cost per car when centralization made = €21575

	2017 Actual	2022 Forecast	High	Mid	Low
Euro (million)	188140	230784.975	221553.5763	227323.2007	230208.0129
Cost of sales	19340.04934	18189.6821	17462.09485	17916.8369	18144.20793
Admin expenses	8254	10489.2513	9964.788704	10174.57373	10426.31576
Admin expenses per car	43871.58499	826.726896	785.3905514	801.9250893	821.7665348
Selling Cost	22710	32457.1979	30834.338	31158.90998	32262.45471
Selling Cost per car	2751393.264	2558.16529	2430.257022	2455.838675	2542.816295

#### Cost per car when centralization made = €21575

	2017 Actual	2022 Forecast	High	Mid	Low
Euro (million)	188140	230784.975	221553.5763	227323.2007	230208.0129
Cost of sales	19340.04934	18189.6821	17462.09485	17916.8369	18144.20793
Admin expenses	8254	10489.2513	9964.788704	10174.57373	10426.31576
Admin expenses per car	43871.58499	826.726896	785.3905514	801.9250893	821.7665348
Selling Cost	22710	32457.1979	30834.338	31158.90998	32262.45471
Selling Cost per car	2751393.264	2558.16529	2430.257022	2455.838675	2542.816295

Probability  
High 0.2 Mid 0.4 Low 0.4

Probability  
High 0.1 Mid 0.4 Low 0.5

Probability  
High 0.2 Mid 0.3 Low 0.5

	High Selling		Mid Selling		Low Selling	
Combination: Total 27	Total cost per car	Probability	Total cost per car	Probability	Total cost per car	Probability
High COGS High Admin	20677.74242	0.004	20703.32408	0.006	20790.3017	0.01
High COGS Mid Admin	20694.27696	0.016	20719.85861	0.024	20806.83623	0.04
High COGS Low Admin	20714.11841	0.02	20739.70006	0.03	20826.67768	0.05
Mid COGS High Admin	21132.48448	0.008	21158.06613	0.012	21245.04375	0.02
Mid COGS Mid Admin	21149.01901	0.032	21174.60067	0.048	21261.57829	0.08
Mid COGS Low Admin	21168.86046	0.04	21194.44211	0.06	21281.41973	0.1
Low COGS High Admin	21359.8555	0.008	21385.43716	0.012	21472.41478	0.02
Low COGS Mid Admin	21376.39004	0.032	21401.97169	0.048	21488.94931	0.08
Low COGS Low Admin	21396.23149	0.04	21421.81314	0.06	21508.79076	0.1

Cost per car when centralization made = €21221.24

## 9.2 Scenario 5

Descripton (Euro in milliion)		Option 1	Option 2	Option 3
Development capital cost	Year 0 (2018)	-19500	-11750	0
	Year 1 (2019)	0	0	0
	Year 2 (2020)	0	0	0
	Year 3 (2021)	0	0	0
	Year 4 (2022)	0	0	0
	Year 5 and afterward	0	0	0
	Total	-19500	-11750	0
Penalty for excess emission	Year 0 (2018)	0	0	0
	Year 1 (2019)	0	-526.315789	-526.315789
	Year 2 (2020)	0	-461.680517	-461.680517
	Year 3 (2021)	0	-404.98291	-404.98291
	Year 4 (2022)	0	-355.248166	-355.248166
	Year 5 and afterward	0	-2397.08614	-2397.08614
	Total	0	-4145.31353	-4145.31353
Increase in net profit outside of the USA	Year 0 (2018)	0	0	0
	Year 1 (2019)	1535.087719	1535.087719	438.5964912
	Year 2 (2020)	1481.224992	1481.224992	388.6580486
	Year 3 (2021)	1429.252186	1429.252186	344.4055796
	Year 4 (2022)	1379.102986	1379.102986	305.1916811
	Year 5 and afterward	10236.25698	10236.25698	2080.32818
	Total	16060.92486	16060.92486	3557.179981
	Overall	<u>-3439.07514</u>	<u>165.6113389</u>	<u>-588.133545</u>
Option 1	New engine with MEB technology			
Option 2	Current engine with MEB technology			
Option 3	Current engine without development			
Total Benefit	Year 0 (2018)	-19500	-11750	0
	Year 1 (2019)	1535.087719	1008.77193	-87.719298
	Year 2 (2020)	1481.224992	1019.544475	-73.022468
	Year 3 (2021)	1429.252186	1024.269276	-60.57733
	Year 4 (2022)	1379.102986	1023.85482	-50.056485
	Year 5 and afterward	10236.25698	7839.170838	-316.75796
	Total	<u>-3439.07514</u>	<u>165.6113389</u>	<u>-588.13355</u>