

Strategic Operations Planning of Aggreko in Sustainability

By

Author: (student number – no names)

Date:

Executive Summary

This research report is prepared to focus on the sustainability practices of Aggreko. In order to evaluate the same, its strategic operational challenges are evaluated in a model framework. The model framework evaluated 4 key factors which are economical risk, social risk in hazards and accident, technological risk and environmental risk. The present business state and scenario is explained before the evaluation is performed on the basis of the model. Risks identified in the model are forecasted for next 5 to 10 years to check how they affect the sustainability of the Aggreko. Proposals are made to tackle the risks identified. On the basis of the proposal, different scenarios are created to show how the choice of one proposal affects the outcome of the other. Finally, the concluding section includes key findings, recommendations and future scope of the research. Based on key findings the recommendations are made on areas of financial risk improvement, employee work environment improvement, increased focus on research work and more concrete effort in lowering GHG emissions.

Contents

Table of Contents

1	Introduction	4
2	Methodology.....	4
3	Business Understanding	5
3.1	Current Business Situation	5
3.2	Current Operations	6
4	Future Challenges for the Company	6
4.1	Forecasted Operational Challenges (5-10 year horizon).....	6
4.2	Gap Analysis	9
4.3	Revised Business and Operations Strategy	10
5	Change Proposals	11
5.1	Scenario 1	11
5.2	Scenario 2	11
5.3	Scenario Evaluation	12
6	Conclusions and Recommendations for Management	12
6.1	Key findings	12
6.2	Recommendations	12
6.3	Suggestions for Further Work	12
7	References	13
8	APPENDICES	15

1 Introduction

The report aims to give a brief understanding of how Aggreko is pursuing its goal of creating a sustainable environment. This is a quantitative report that bases its findings on information based on Annual report data and Sustainability report. This report is meant for the public in general. The operational procedures of Aggreko's are evaluated to find out the key challenges it will face in the next 5 years in areas of sustainability management and supply chain disruptions. Two different operational procedures are suggested to counter those challenges in the next 5 years. This report is prepared on an independent evaluation basis and meant for those looking forward to a quantitative-based prediction report. Aggreko understands the need to take footsteps, that don't harm the environment and at the same time cater to the ever-growing energy demand.

2 Methodology

In order to evaluate the sustainable business practices of Aggreko, a framework model is created that focuses on areas of the business, which are an investment in technology, capital efficiency, focus on customers and involvement of expert people and environment protection policies (Acar et al., 2019). The finding and analysis of the strategies in these areas will help focus on 4 key aspects of the model which are, environmental, social, economic and technological.

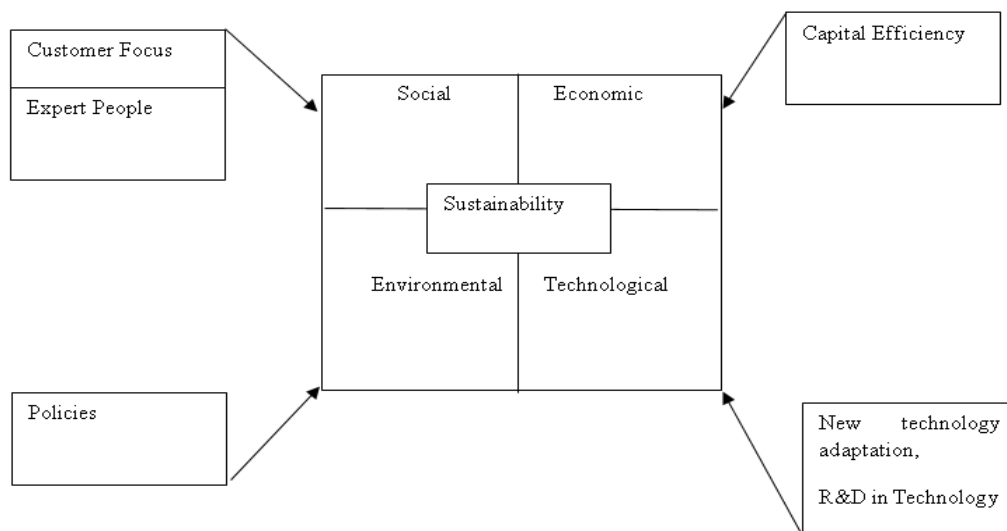


Fig1: Framework model for analysis

(Source: Sustainability Balanced Score Card, 2022)

3 Business Understanding

3.1 Current Business Situation

Aggreko is heavily invested in the energy solutions domain in services such as providing electricity, heating solutions and cooling needs with the help of the latest storage solutions and fuel supply. According to the latest Annual report for 2020, Aggreko generated £1365 m in revenue, its pre-exceptional operational profit stood at £136 million and diluted EPS at 21.8 p. It caters to the 80 countries worldwide with average power on hiring 60008 MW, 6000 permanent employees and 182 sales on hire (Aggreko Annual Report, 2020). The average temperature control on hire is about 697 MW and as of 2019 latest data, Aggreko was running 119 MW hybrid projects. The 2 business arms of Aggreko are rental solutions and power solutions. The revenue earned through rental solutions amounted to £ 693 mil which is 53% of the total group revenue, the operating profit generated from it amounted to £102 m, which is 75% of the group. The power solutions business division generated £ 362 m (27% of the group), and £ 18 mil in profit (13% of the group.) It is to be noted that the rental solutions that earn the major part of the revenue are dependent on small and short duration projects. In contrast, the power solutions business involves even shorter projects.

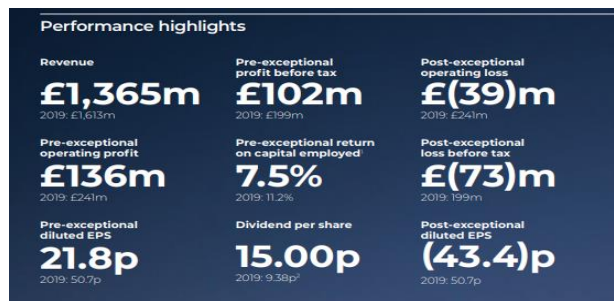


Fig 2: Business financial highlights
(Source: Aggreko Annual Report, 2020)



Fig 3: Business Operational highlights
(Source: Aggreko Annual Report, 2020)

3.2 Current Operations

The present operational procedure is explained in the diagram below. It is to be noted that, Aggreko is not a direct manufacturer of electrical heavy and small components, a manufacturer of storage units (Adebayo, 2021). It acts as an intermediary through which it provides solutions to 3rd party customers with the help of finished goods from suppliers. It is involved in assembling or disassembling or putting together a viable solution but not manufacturing.

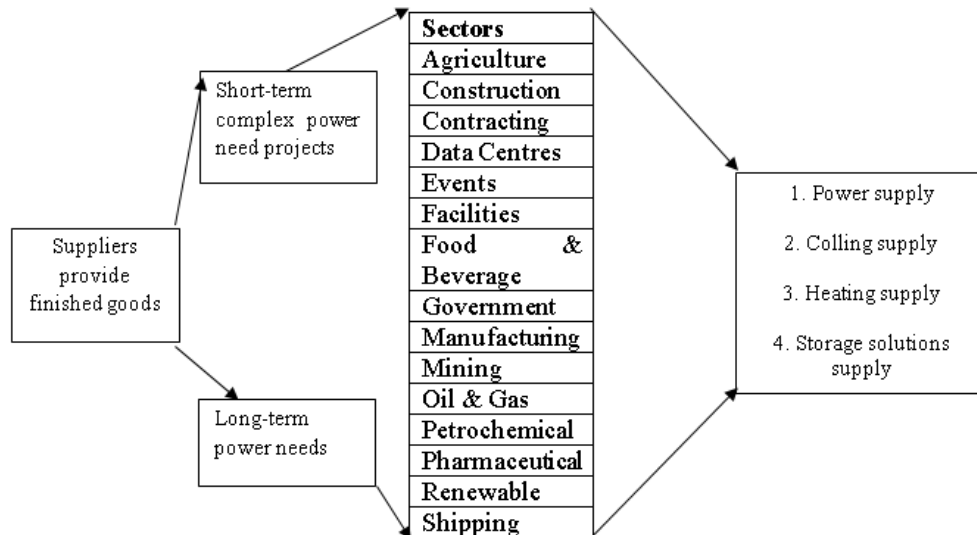


Fig 4: Current operational process map

(Source: Aggreko Annual Report, 2020-2010)

Aggreko has business ties with numerous suppliers in various countries. This is one of the main reasons which enables it to procure a critical component of its project in a short duration of time (Zavala-Alcívar et al., 2020). As it is not directly involved in manufacturing it gives ample scope in terms of capital and manpower to develop R& D programs. These R&D programs help develop efficient power distribution and consumption plans for consumers. This is one of the core competencies of Aggreko which enables it to deliver efficient power management programs to its intended client (Meng et al., 2018). Its R&D programs also enable it to provide necessary guidelines to its suppliers with expertise and intellectual rights to develop more energy-efficient and sustainable electrical components.

4 Future Challenges for the Company

4.1 Forecasted Operational Challenges (5-10 year horizon)

The next 5 to 10 years will witness increased operational challenges mainly in economic performance, technological improvement, employee safety and satisfaction in social context, and emission of GHG in environmental implications. <<All graphics and tables to be enumerated and titled. The enumeration should be referred to in the text to explain to the reader why it is important. You can make internal forward references.

Economic risk

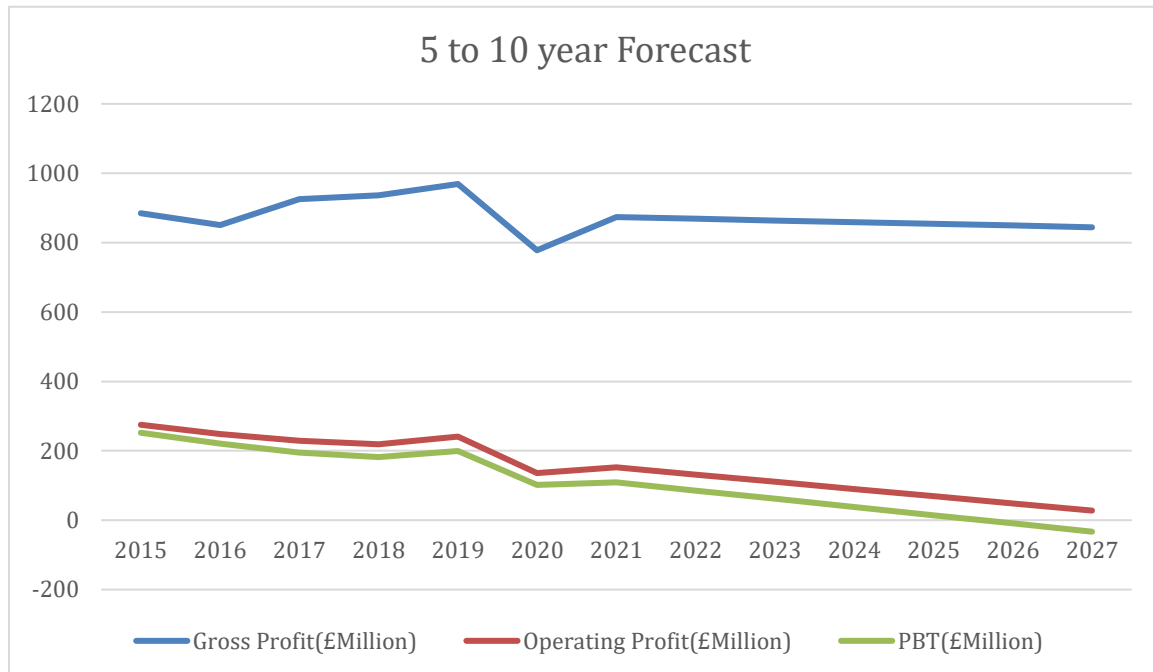


Chart 1: Economic forecast (Data in Table A in Appendix)

(Source: Aggreko Annual Report, 2020-2010)

The 5 to 10 years forecast of some key financial indicators such as gross profit, operating profit and profit before tax show a decreasing trend. The data are taken from Annual report from 2015 to 2020. Based on the past historical data, 5 to 10 years of forecasting is presented with the help of linear data extrapolation. The decreasing profit margin can create operational risk in supply chain and risk in project execution in time.

	Notes	Total before exceptional items 2020 £ million	Exceptional items (Note 7) 2020 £ million	2020 £ million	2019 £ million
Revenue	4	1,365	-	1,365	1,613
Cost of sales		(587)	(94)	(681)	(644)
Gross profit		778	(94)	684	969
Distribution costs		(432)	(2)	(434)	(482)
Administrative expenses		(206)	(17)	(223)	(249)
Impairment loss on trade receivables	18	(17)	(65)	(82)	(7)
Other income	2	13	3	16	10
Operating profit/(loss)	4	136	(175)	(39)	241
Net finance costs	9				
- Finance cost		(38)	-	(38)	(46)
- Finance income		4	-	4	4
Profit/(loss) before taxation	5	102	(175)	(73)	199
Taxation	10	(46)	8	(38)	(70)
Profit/(loss) for the year		56	(167)	(111)	129
All profit/(loss) for the year is attributable to the owners of the Company.					
Basic earnings per share (pence)	12			(43.40)	50.80
Diluted earnings per share (pence)	12			(43.40)	50.70

	Notes	2019 £ million	2018 £ million
Revenue	4	1,613	1,760
Cost of sales		(644)	(824)
Gross profit		969	936
Distribution costs		(482)	(476)
Administrative expenses		(249)	(241)
Impairment loss on trade receivables	16	(7)	(7)
Other income	2	10	7
Operating profit	4	241	219
Net finance costs	8		
- Finance cost		(46)	(41)
- Finance income		4	4
Profit before taxation	5	199	182
Taxation	9	(70)	(57)
Profit for the year		129	125
All profit for the year is attributable to the owners of the Company.			
Basic earnings per share (pence)	11	50.80	49.22
Diluted earnings per share (pence)	11	50.70	49.18

Fig 5: Aggreko Income statement

(Source: Aggreko Annual Report, 2020-2010)

Hazardous accident risk

In the social context, the main focus areas are employee satisfaction and employee hazards prevention (Olujobi, 2020). The social aspect bears special importance as much of the company's success depends on how it treats its employees and staff. This is measured in two ways: one of the hazardous incident count indicated by lost time due to injury and the other is employee turnover (Akinyemi, 2019). For this analysis historical data from 2012 till 2020 is taken to prepare the forecast.

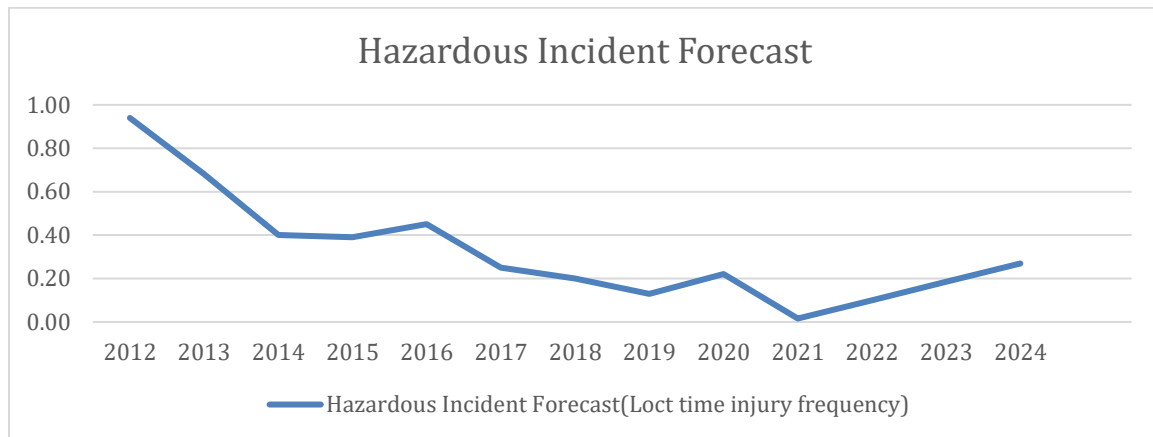


Chart 2: Hazardous incident forecast (Data in Table B in Appendix)

(Source: Aggreko Annual Report, 2020-2010)

Technological complication

In technological advancement, the years 2015 to 2020 saw the main focus on cost reduction, fleet improvement, improved fuel efficiency, broadening the range of energy sources, competitive configurable products, and integration of renewable and storage technology. One of the prime focuses of all the developmental programs has been fleet development (Cvetković, 2021). So it is predictable that in the next 5 to 10 years, fleet management and development will be the prime focus of technological development.

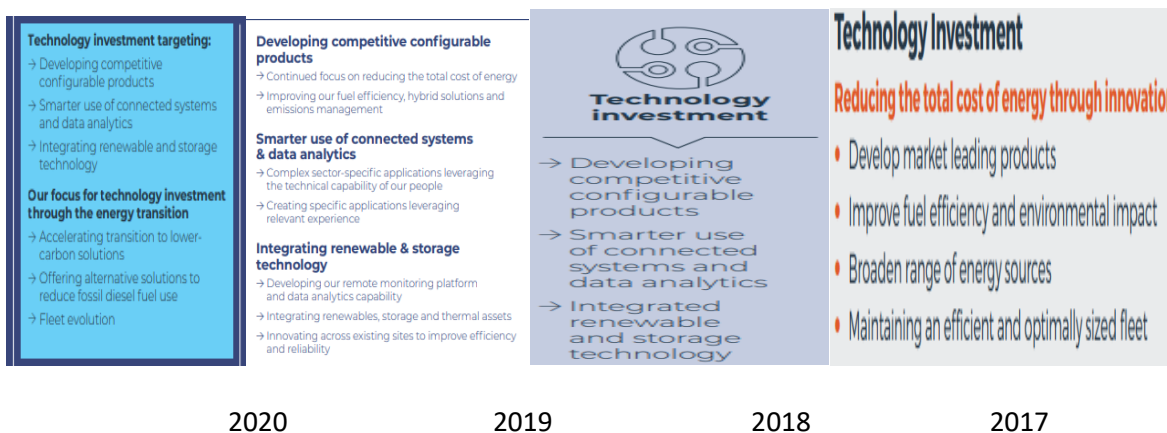


Fig 6: Technology roadmap from 2017 to 2020

(Source: Aggreko Annual Report, 2020-2010)

Environmental risk

On the environmental front, the greenhouse gas emission is considered to measure if Aggreko is following its environmental sustainability policy. The general trend in GHG emission is decreasing but by 2030 it cannot near zero net emission.

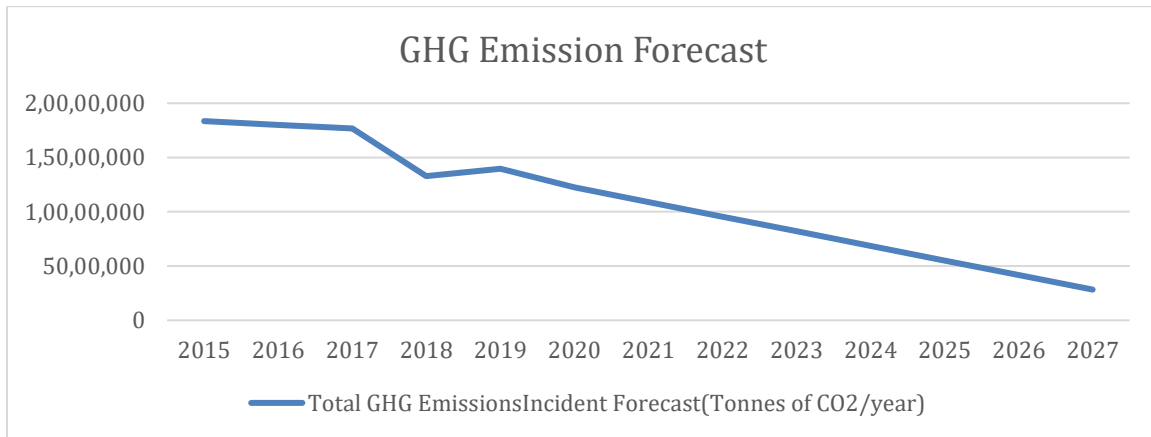


Chart 3: GHG Emission forecast (Data in Table C in Appendix)

(Source: Aggreko Annual Report, 2020-2010)

4.2 Gap Analysis

Economic

Analysis of the income statement reveals that the operating profit decreased from £ 241million in 2019 to £ 136 million only in 2020. This is mainly because total revenue sales revenue collected decreased substantially in 2020 compared to 2019 (Aggreko Annual Report, 2020). Although the cost of sales also decreased it was not enough to offset the drastic decrease in sales revenue. R&D works need a serious capital infusion (Razmjoo and Davarpanah, 2019). If the string of revenue losses continues in the future, it will not be able to invest in R&D programs. It can also affect its strategic relationship with suppliers and customers. As Aggreko operates in different countries, the external effects that can come and degrade its revenue even further are external competition in other countries and policy changes by governments of respective countries (Le Guen et al., 2018).

Social risk

To understand the future challenges in the social context, two important aspects need to be understood. One is the social context of the present market where it is operating and the other is internal employees who provide the required skills and labor. In the external context, it must be noted that operating in different countries under different social constructs and customs requires a different organisational outlook (Qi et al., 2020). So the organisational value which drives the

organisational outlook applicable in the parent country of the company may not be applicable in other countries. So the higher management should be in touch with the ground realities of the social and cultural contrast. This presents a challenge in the future as Aggreko expands its business. A significant difference in project execution and success in different countries can be regarded as a sign of weakness in vision and mission. This challenge is present and will rise even more in future. In the internal context employees and staff working in hazardous areas of electrical equipment handling and maintenance is another area that needs special mention. The number of employees inducted will increase as Aggreko continues to expand. With this, the chance of more employees facing hazardous events and conditions resulting in severe injury will increase in the future (Centobelli et al., 2018).

Technology

The energy consumption and distribution sector are heavily technology-dependent. New and advanced technology development by competitors poses a serious challenge for Aggreko. Power transmission, distribution and storage are dependent upon two core principles, one is cost-efficient and the other one is safety. Distributing power through power grids over extended distances without fluctuation is a cost-intensive matter and safe handling through human intervention needs extra precaution (Sarangi et al., 2019). Consumers may look for new and innovative ways of power distribution that brings down their cost from suppliers and thus new technological innovation is necessary. Aggreko also suffers from material degradation. As electrical components are subject to immense thermal fluctuation, they suffer from a severe impairment. New ways of delaying component impairment are another technological challenge that is already present and will give serious completion in future (Cîrstea et al., 2018)

Environmental

Although the emission of GHGs is within the standards and shows a decreasing trend. This does not guarantee that Aggreko will be able to reach its future goals of net-zero emission by 2030 or sooner (Annual Report, 2020). This is because various policy changes in other countries negatively affect the planned process of sustainable development.

4.3 Revised Business and Operations Strategy

The revised business strategy includes increasing the profit margin. This in turn will help Aggreko allocate more funds for R&D works. Fleet optimization and increasing fuel efficiency need more prioritization. Internal employees and staff should be given periodical safety hazard training to decrease accidental injury (Prasad et al., 2019)

5 Change Proposals

5.1 Scenario 1

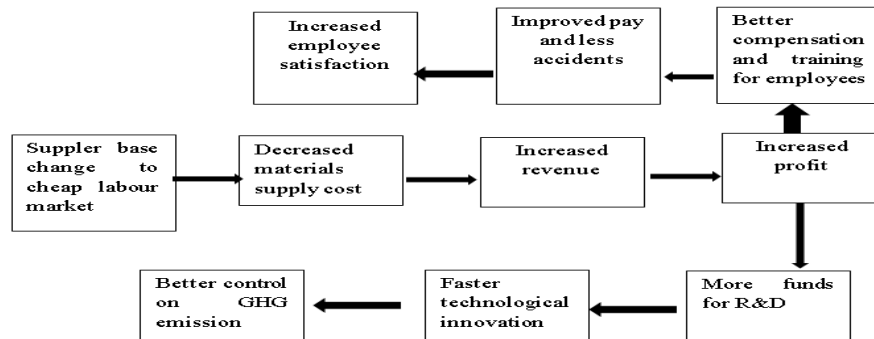


Fig 7: Scenario 1

Source: (Mauree at al., 2019)

Aggreko can bring a tsunami of change in changing its supplier base from cheap labor markets. This will enable it to save on materials supply costs. This in turn helped to increase the profit margin that is decreasing for the past few years. Increased profit can have more funds for R&D works (Bjørn, 2020). This will increase its technology adaptability and develop a more eco-friendly electrical supply and storage system. The increased profit can also be diverted to increasing the pay package program for employees and staff and increased training programs on employee safety and hazard. This will increase employee satisfaction in turn.

5.2 Scenario 2

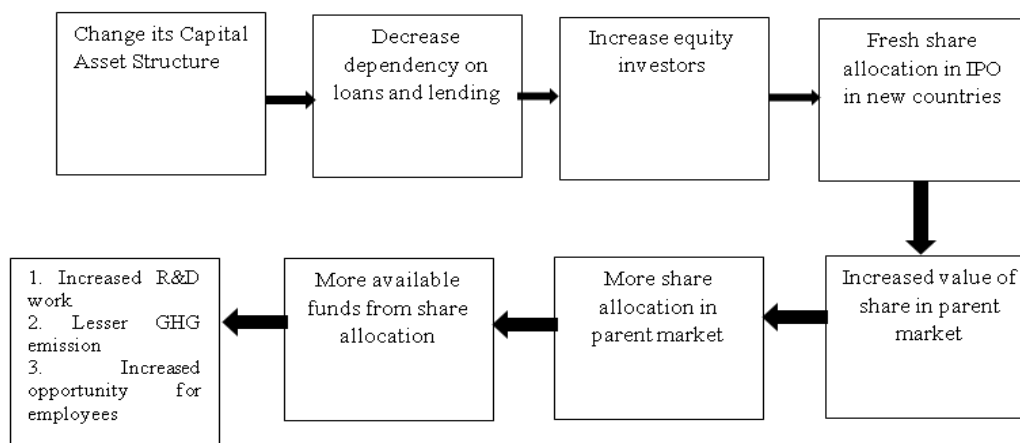


Fig 8: Scenario 2

Source: (Kolosok et al., 2021)

Suppose Aggreko decides to change its capital asset structure by including more equity shares and fewer loans, debentures and bonds. In that case, it will decrease its liability to Aggreko to a greater degree. This in turn will also improve its liquidity. Aggreko can either float new equity shares in the market or look for new investors in the form of IPO in new countries.

Aggreko already enjoys a global presence in 80 countries, it carries a well-established brand value. A new IPO will bring fresh funding on which it can pace up its R&D capability to reach its goal of net-zero emission by 2030.

5.3 Scenario Evaluation

In the present context, it is more suggested that Aggreko follow the 2nd scenario of changing its capital funding structure. This is because scenario 2 presents a better option for minor adjustment and predictability. Changing the supplier base like scenario 1 can cause massive disruption in its supply chain, jeopardizing its cost reduction technique developed patiently over the years.

6 Conclusions and Recommendations for Management

6.1 Key findings

Aggreko is suffering from a low-profit margin for a significantly long time. As it does not have its manufacturing capacity, its reliance on suppliers is heavy. This can affect its R&D work pace due to a fund crunch. Ultimately, it will miss its target of meeting net-zero emissions by 2030 by a large margin. Accidental injury is also noticed and needs to be reduced. It has a broad R&D goal with less focus on direct sustainability management.

6.2 Recommendations

- It should change its capital funding model according to changing times. Less reliance on loans and debts and more reliance on long term equity shares can bring in new funds in the form of IPO from foreign markets.
- It should improve employee satisfaction through improved pay packages and more training programs.
- R&D works should focus more on delivering eco-friendly products and has a low impairment chance. This will ensure the product lasts long through less wear and tear.
- Increased focus to reduce GHG emissions to reach zero net target by 2030

6.3 Suggestions for Further Work

Further analysis needs in areas of policy evaluation. The sustainability policy followed by Aggreko can be evaluated by comparing its performance against other industry performers. This will help to understand the ways its policy is affecting its performance. Sustainability policy, employee appraisal policy, and supplier management policy are some areas of comparative analysis.

7 References

- Acar, C., Beskese, A. and Temur, G.T., (2019). A novel multicriteria sustainability investigation of energy storage systems. *International Journal of Energy Research*, 43(12), pp.6419-6441. [online] Available at: <https://www.academia.edu/download/65229183/_2019_A_novel_multicriteria_sustainability_investigation_of_energy_storage_systems.pdf> [Accessed 14 April 2022].
- Adebayo, T.S., Awosusi, A.A., Odugbesan, J.A., Akinsola, G.D., Wong, W.K. and Rjoub, H., (2021). Sustainability of energy-induced growth nexus in Brazil: do carbon emissions and urbanization matter?. *Sustainability*, 13(8), p.4371. [online] Available at: <<https://www.mdpi.com/2071-1050/13/8/4371/pdf>> [Accessed 14 April 2022].
- Aggreko Annual Report (2020). [online] Available at: <<https://ir.aggreko.com/~media/Files/A/Aggreko/annual-report/2020-aggreko-annual-report.pdf>> [Accessed 14 April 2022].
- Aggreko Annual Report (2020-2010). [online] Available at: <<https://ir.aggreko.com/investors/investor-centre/report-results-and-presentations/report-and-results-landing>> [Accessed 14 April 2022].
- Akinyemi, O., Efobi, U., Osabuohien, E. and Alege, P., (2019). Regional integration and energy sustainability in Africa: exploring the challenges and prospects for ECOWAS. *African Development Review*, 31(4), pp.517-528. [online] Available at: <<https://www.econstor.eu/bitstream/10419/227959/1/1682193527.pdf>> [Accessed 14 April 2022].
- Bjørn, A., Chandrakumar, C., Boulay, A.M., Doka, G., Fang, K., Gondran, N., Hauschild, M.Z., Kerkhof, A., King, H., Margni, M. and McLaren, S., (2020). Review of life-cycle based methods for absolute environmental sustainability assessment and their applications. *Environmental Research Letters*, 15(8), p.083001. [online] Available at: <<https://iopscience.iop.org/article/10.1088/1748-9326/ab89d7/pdf>> [Accessed 14 April 2022].
- Centobelli, P., Cerchione, R. and Esposito, E., (2018). Environmental sustainability and energy-efficient supply chain management: A review of research trends and proposed guidelines. *Energies*, 11(2), p.275. [online] Available at: <<https://www.mdpi.com/1996-1073/11/2/275/pdf>> [Accessed 14 April 2022].
- Cîrstea, S.D., Moldovan-Teseliu, C., Cîrstea, A., Turcu, A.C. and Darab, C.P., (2018). Evaluating renewable energy sustainability by composite index. *Sustainability*, 10(3), p.811. [online] Available at: <<https://www.mdpi.com/2071-1050/10/3/811/htm>> [Accessed 14 April 2022].
- Cvetković, D., Nešović, A. and Terzić, I., (2021). Impact of people's behavior on the energy sustainability of the residential sector in emergencies caused by COVID-19. *Energy and Buildings*, 230, p.110532. [online] Available at: <<https://www.sciencedirect.com/science/article/pii/S0378778820320971>> [Accessed 14 April 2022].
- Kolosok, S., Bilan, Y., Vasylieva, T., Wojciechowski, A. and Morawski, M., (2021). A scoping review of renewable energy, sustainability and the environment. *Energies*, 14(15), p.4490. [online] Available at: <<https://www.mdpi.com/1996-1073/14/15/4490/pdf>> [Accessed 14 April 2022].
- Le Guen, M., Mosca, L., Perera, A.T.D., Coccolo, S., Mohajeri, N. and Scartezzini, J.L., (2018). Improving the energy sustainability of a Swiss village through building renovation and renewable energy integration. *Energy and Buildings*, 158, pp.906-923. [online] Available at: <https://www.researchgate.net/profile/Atd-Perera/publication/320479106_Improving_the_energy_sustainability_of_a_Swiss_village_through_building_renovation_and_renewable_energy_integration/links/59f05e1eaca272cdc7ca26ab/Improving-the-energy-sustainability-of-a-Swiss-village-through-building-renovation-and-renewable-energy-integration.pdf> [Accessed 14 April 2022].

Mauree, D., Naboni, E., Coccolo, S., Perera, A.T.D., Nik, V.M. and Scartezzini, J.L., (2019). A review of assessment methods for the urban environment and its energy sustainability to guarantee climate adaptation of future cities. *Renewable and Sustainable Energy Reviews*, 112, pp.733-746. [online] Available at: <<https://www.sciencedirect.com/science/article/pii/S1364032119303909>> [Accessed 14 April 2022].

Meng, Y., Yang, Y., Chung, H., Lee, P.H. and Shao, C., (2018). Enhancing sustainability and energy efficiency in smart factories: A review. *Sustainability*, 10(12), p.4779. [online] Available at: <<https://www.mdpi.com/2071-1050/10/12/4779/pdf>> [Accessed 14 April 2022].

Olujobi, O.J., (2020). The legal sustainability of energy substitution in Nigeria's electric power sector: renewable energy as alternative. *Protection and Control of Modern Power Systems*, 5(1), pp.1-12. [online] Available at: <<https://pcmp.springeropen.com/articles/10.1186/s41601-020-00179-3>> [Accessed 14 April 2022].

Prasad, M., Mishra, T. and Bapat, V., (2019). Corporate social responsibility and environmental sustainability: Evidence from India using energy intensity as an indicator of environmental sustainability. *IIMB Management Review*, 31(4), pp.374-384. [online] Available at: <<https://reader.elsevier.com/reader/sd/pii/S0970389617300137?token=1E0DE0416B6CB7DFE0B832926DFA5A530D750C50F04B682DAA40F0F5DB7164E46683EA283D0BF37E4D70714759B9564F&originRegion=eu-west-1&originCreation=20220414152139>> [Accessed 14 April 2022].

Qi, W., Huang, Z., Dinçer, H., Korsakienė, R. and Yüksel, S., (2020). Corporate governance-based strategic approach to sustainability in energy industry of emerging economies with a novel interval-valued intuitionistic fuzzy hybrid decision making model. *Sustainability*, 12(8), p.3307. [online] Available at: <<https://www.mdpi.com/2071-1050/12/8/3307/pdf>> [Accessed 14 April 2022].

Razmjoo, A.A. and Davarpanah, A., (2019). The role of renewable energy to achieve energy sustainability in Iran. An economic and technical analysis of the hybrid power system. *Technology and Economics of Smart Grids and Sustainable Energy*, 4(1), pp.1-11. [online] Available at: <<https://link.springer.com/article/10.1007/s40866-019-0063-3>> [Accessed 14 April 2022].

Sarangi, G.K., Mishra, A., Chang, Y. and Taghizadeh-Hesary, F., (2019). Indian electricity sector, energy security and sustainability: An empirical assessment. *Energy Policy*, 135, p.110964. [online] Available at: <<https://reader.elsevier.com/reader/sd/pii/S0301421519305518?token=B5480828B4DBA2969B6961780AD76641112983EF14C1C37F6BF701E94D64E6A231AC68C09F23ABC1D7E31C92A3259F63&originRegion=eu-west-1&originCreation=20220414152344>> [Accessed 14 April 2022].

Sustainability Balanced Score Card. (2022). [online] Available at: <https://www.researchgate.net/figure/Sustainability-balanced-scorecard-of-the-aluminium-company_fig2_317742872> [Accessed 14 April 2022].

Zavala-Alcivar, A., Verdecho, M.J. and Alfaro-Saiz, J.J., (2020). A conceptual framework to manage resilience and increase sustainability in the supply chain. *Sustainability*, 12(16), p.6300. [online] Available at: <<https://www.mdpi.com/2071-1050/12/16/6300/pdf>> [Accessed 14 April 2022].

8 APPENDICES

	Gross Profit(£Million)	Operating Profit(£Million)	PBT(£Million)
2015	885	275	252
2016	851	248	221
2017	925	229	195
2018	936	219	182
2019	969	241	199
2020	778	136	102
2021	874	152	109
2022	869	131	85
2023	864	111	62
2024	859	90	38
2025	854	69	14
2026	849	48	-9
2027	845	28	-33

Table A

	Hazardous Incident Forecast (Loct time injury frequency)
2012	0.94
2013	0.68
2014	0.40
2015	0.39
2016	0.45
2017	0.25
2018	0.20
2019	0.13
2020	0.22
2021	0.02
2022	0.10
2023	0.18
2024	0.27

Table B

	Total GHG Emissions Incident Forecast(Tonnes of CO2/year)
2015	1,83,54,928
2016	1,80,10,923
2017	1,76,92,195
2018	1,32,75,669

2019	1,39,69,616
2020	1,22,57,395
2021	1,08,90,643
2022	95,46,983
2023	82,03,322
2024	68,59,662
2025	55,16,002
2026	41,72,341
2027	28,28,681

Table C