Arctic Automotive Co. Case: EVs, EV Batteries And IFRS

By: **Kennard S. Brackney, Ph.D., CPA** and Tom Downen, Ph.D., CPA

Abstract

The Arctic Automotive Co. case calls for students to convert a foreign company's International Financial Reporting Standards (IFRS) basis financial statements to a U.S. Generally Accepted Accounting Principles (U.S. GAAP) basis. The case is set in the electric vehicle (EV) manufacturing industry. A fictitious U.S. auto manufacturer is seeking to acquire a manufacturer of EV batteries. One of several possible target companies is based outside the U.S. and uses IFRS for reporting purposes. To properly evaluate the foreign target from a financial perspective, the U.S. auto maker must perform a conversion of the target's IFRS financial statements to a U.S. GAAP basis. The case aims to provide students with some experience in: (1) Identifying differences between IFRS and U.S. GAAP; (2) Researching and applying the IFRS and U.S. GAAP standards; and (3) Converting a foreign company's IFRS balances to a U.S. GAAP basis.

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INTRODUCTION

The Arctic Automotive Co. case calls for students to convert a foreign company's International Financial Reporting Standards (IFRS) basis financial statements to a U.S. Generally Accepted Accounting Principles (U.S. GAAP) basis. The case is set in the electric vehicle (EV) manufacturing industry. A fictitious U.S. auto manufacturer is seeking to acquire a manufacturer of EV batteries. One of several possible target companies is based outside the U.S. and uses IFRS for reporting purposes. To properly evaluate the foreign target from a financial perspective, the U.S. auto maker must perform a conversion of the target's IFRS financial statements to a U.S. GAAP basis.

The case aims to provide students with some experience in:

(1) Identifying differences between IFRS and U.S. GAAP;
(2) Researching and applying the IFRS and U.S. GAAP standards; and
(3) Converting a foreign company's IFRS balances to a U.S. GAAP basis.

ARCTIC AUTOMOTIVE CO.

Arctic Automotive Co. is a publicly-traded U.S. automobile manufacturer that began production in 1994. The company sells almost exclusively in the U.S., and has consistently offered the following models over the past decade:

- **ARCTIC BLIZZARD** (rugged sport utility vehicle)
- **ARCTIC SLED** (boxy, mid-sized wagon)
- **ARCTIC FOX** (economy sedan with hatchback option)

More recently, in response to trends in the U.S. and some foreign countries, the company has ventured into the electric vehicle (EV) industry with the introduction of the **ANTARCTIC**. This model currently represents a relatively small percentage of the total company sales revenue and also a relatively small percentage of the overall EV market. The company would like to expand production and sale of this model, anticipating less future demand growth for the other models that utilize internal combustion engines.

INDUSTRY INFORMATION

EV production and sales have increased steadily in recent years. In 2017, the global sales of EVs increased more than 50% from the previous year (ChinaDaily.com.cn 2018). The drivers of growth include concerns about vehicle emissions and the improving performance of EV batteries. Longer term, the demand for EVs is predicted to increase to as much as 40% of all vehicle purchases by 2037 (Perkowski 2017). A number of auto manufacturers hope to capitalize on the projected shift toward EVs. Ford Motor Company plans to launch 13 new EV models by 2020, with the goal of EVs accounting for 40% of all model offerings (Morin 2017; Woodyard 2016). Volkswagen AG, partly to avert attention away from its recent emissions scandals,

signaled an intention to produce and sell as many as three million EVs per year by 2025, representing about 25% of the company's total projected sales volume (Bryant 2016).

The U.S. is one of the largest EV sales markets in the world, second only to China in 2017 (Lutsey *et al.* 2018). The U.S. government has played a role in supporting the domestic EV market. The Energy Improvement and Extension Act of 2008 created an income tax credit of up to $7,500 to subsidize the cost of an EV purchase. The tax credit program remains in effect, although the legislation caps the number of subsidies available to each manufacturer at 200,000 (Lang 2017). Through October 2018, two companies have reached the cap, Tesla, Inc. and General Motors Company (EVAdoption 2018a). These two companies will move into their purchaser tax credit phase-out year in 2019, a development that could impact their future sales. For the year 2017, the top five selling EV models in the U.S. were Tesla Model S (13.5% market share), Chevrolet Bolt (11.7%), Tesla Model X (10.7%), Toyota Prius Prime (10.5%), and Chevrolet Volt (10.2%) (EVAdoption 2018b).

As for China, the government recently launched the Made in China 2025 program, aimed at promoting certain industries, such as EVs, deemed to be of strategic importance. The country already holds the position of largest EV sales market, with close to 50% of the global sales in 2017 (Lutsey *et al*. 2018). China intends to increase its EV production by a factor of 10, to five million units annually, by the year 2020 (Herh 2017). For the year 2017, the Chinese company BYD Auto Co. was the world's leading EV manufacturer, with 113,669 units sold. Another Chinese company, BAIC Motor Corporation, was close behind at 103,199 units sold (Voelcker 2018).

All EV manufacturers face a major challenge in the form of production and/or acquisition of batteries and battery packs, which represent about half of the total cost of an EV (Sanderson, Hancock, and Lewis 2017). Presently, EV manufacturers rely predominantly on lithium-ion (li-ion) battery technologies (Lebedeva, Di Persio, and Boon-Brett 2017). Li-ion battery pack production and distribution is complicated, in part because the battery packs are heavy (about double the weight of an internal combustion engine) and because the battery packs are considered hazardous material when shipped (DHL 2017). Therefore, auto manufacturers generally seek out battery pack manufacturing facilities that are not geographically distant from their EV manufacturing plants (Gibbs 2017). For example, Tesla recently entered into a joint venture with Panasonic Corporation to construct and operate a battery pack manufacturing facility (named the Gigafactory) in Nevada, close to the Tesla auto facility in California (Lambert 2017).

EV manufacturers tend to purchase the batteries they need from battery and battery pack manufacturers. Asian countries and companies dominate the manufacture of li-ion batteries and battery packs, led by Chinese (C), Japanese (J) and South Korean (SK) companies. The top three suppliers of batteries for passenger EVs in 2017 were Panasonic (J; 29% of global sales), BYD (C; 13%) and LG Chem (SK; 10%) (Kane 2018). Alternatively, some EV manufacturers prefer to internally produce the batteries they need. Examples of companies that produce at least some of their own battery packs include BMW, BYD, Daimler AG, Groupe Renault, and Tesla, with its Gigafactory (Lebedeva, Di Persio, and Boon-Brett 2017). Another example is Nissan Motor Co., which continues to produce batteries for its EV models at a plant in Tennessee (Gale 2018).

For auto manufacturers intending to grow their EV business, an acquisition could speed the process. In particular, an auto manufacturer might benefit from acquiring a battery company in terms of buying time, scale, technology, and access to markets (Harrop 2016). Along these lines, in 2014, Volkswagen purchased a sizable interest in QuantumScape Corporation, a company developing next generation solid-state li-ion batteries (Bryant 2016). In 2017, Ford explored the purchase of Lucid Motors, an EV and EV battery company, attracted especially to the company's battery patents and technologies (Harris 2017). Some industry observers believe such transactions will become more common in the future (Harrop 2016).

China, through its Made in China 2025 program, is prioritizing the EV battery industry too. The government has begun restricting imports of battery packs from other countries in an effort to protect and promote its domestic battery industry (Sanderson, Hancock, and Lewis 2017). The restrictions are hurting South Korean battery manufacturers the most. From 2012 to 2016, a period during which China was ramping up its production of EVs, the country cut its imports of EV batteries from South Korean suppliers by 35% (Herh 2017). The freezing out of South Korean battery producers from the world's largest EV market could create opportunities for U.S. EV manufacturers to collaborate with, or even acquire, some of the South Korean companies.

A FOREIGN ACQUSITION TARGET

To support the expansion of its EV line, Arctic Automotive is seeking to acquire a smaller li-ion battery manufacturer. Arctic hopes to secure a source of supply and gain access to an established research and development program. Within the next few years, Arctic may want to build a battery plant nearby its existing EV manufacturing facility in the U.S. Arctic is considering several acquisition targets in the U.S., but also one in South Korea – **WORLDWIDE 'MOTIVE BATTERIES** (WoMBat). Arctic is familiar with the U.S. targets, but now wants to examine closer the South Korean company. Arctic's operating executives will be evaluating the technology and manufacturing capabilities at WoMBat. In addition, the financial executives must evaluate WoMBat's financial performance and condition, and also compare the company to the U.S. target options.

For reporting, WoMBat follows IFRS, as is appropriate in South Korea. The financial executives at Arctic are accustomed to U.S. GAAP, and the potential U.S. targets utilize U.S. GAAP as well. To aid the financial executives in evaluating the financial performance and position of WoMBat, and for purposes of comparing to other potential U.S. acquisition targets, the executives need for the WoMBat financial statements to be converted into U.S. GAAP and to reflect the methods that Arctic and the other potential targets commonly utilize. The financial executives want to see the full set of conversion adjustments (entries), along with a brief, yet informative, explanation of each adjustment.

CASE INSTRUCTIONS

Tasks

Exhibit 1 provides four of the IFRS financial statements issued by WoMBat as of and for the year ended December 31, 2018: Income Statement, Statement of Comprehensive Income, Statement of Changes in Equity, and Balance Sheet. These financial statements are expressed in U.S. dollars, the result of a convenience translation from South Korean *won* amounts using the December 31, 2018 won-to-dollar spot exchange rate. For additional clarification on the content of the financial statements, see the relevant excerpts from WoMBat's financial statement notes provided as Exhibit 2. This exhibit includes the additional information concerning the various items that is needed to convert the financial statements to a U.S. GAAP basis. The U.S. GAAP-related information is shown in italics near the end of each note.

This assignment requires you to convert each of the four financial statements to U.S. GAAP and to document the conversion adjustments. As far as documenting your conversion adjustments, a preformatted table is provided in Exhibit 3 – Template for IFRS-to-U.S. GAAP Adjustments and Literature Citations. For each conversion adjustment, you must provide a brief description (2–3 sentences) of WoMBat's treatment under IFRS and a brief description of the corresponding U.S. GAAP/Arctic treatment that differs. Identify and cite the supporting guidance from both the IFRS standards and the U.S. GAAP standards. Be specific in your citations, including the specific paragraph that applies. In addition, for each conversion adjustment, you should provide the adjusting entry needed to convert the affected balances from IFRS to U.S. GAAP.

This assignment requires a total of **10 adjustments** (ADJs 1–10). Review WoMBat's IFRS financial statements and the related note excerpts (Notes A–H) to identify the conversion adjustments needed. An effective approach might be to review this information from the perspective of what you are accustomed to seeing for U.S. companies, and then investigate any accounting policies that do not seem to be familiar. The case provides you with two forms of assistance in identifying the 10 adjustments. First, see the blue numeric notations inserted into WoMBat's IFRS financial statements. These notations signal items that are affected by each adjustment. And second, see the Exhibit 3 template that includes a preliminary labeling of each adjustment. The preliminary labeling highlights the asset or liability item that is the focus of each adjustment. As you document each conversion adjustment, expand on the preliminary label to make it more specific and descriptive.

Note that your task is to convert the WoMBat financial statements into a format that is not only compliant with U.S. GAAP, but also consistent with the content and format that Arctic Automotive executives are accustomed to evaluating (and comparable to the reporting of potential U.S. acquisition targets). As such, even where certain WoMBat methods are allowable within U.S. GAAP, adjustments may be necessary to be consistent with normal Arctic approaches.

To summarize, you must **complete the following four tasks**:

(1) For each adjustment, briefly describe both WoMBat's treatment under IFRS and the U.S. GAAP/Arctic treatment that differs.
(2) For each adjustment, provide the supporting citations (specific paragraph numbers) from both IFRS and U.S. GAAP standards.

(3) For each adjustment, supply the full IFRS-to-U.S. GAAP/Arctic conversion entry.
(4) Prepare the resulting U.S. GAAP basis financial statements for WoMBat.

Present your answers to Tasks 1, 2 and 3 in the Exhibit 3 template provided. Use Excel to prepare your solution to Task 4 (the U.S. GAAP basis financial statements).

Optional Tasks

The executives at Arctic Automotive are particularly interested in the guidance and adjustments necessary for the capitalization of interest / borrowing costs (ADJ 4). For this adjustment, please provide more detailed research documentation than would be included in the table in Exhibit 3. The more detailed documentation should include very specific citation and explanation of the relevant guidance from both IFRS and U.S. GAAP and detailed computation of adjustment amounts (approximately 1–2 pages, single-spaced).

Further, the executives have requested detailed explanations for (*i*) why the various adjustments impact the deferred tax position of WoMBat (approximately 1–2 pages, single-spaced) and (*ii*) why no retroactive adjustment is made for converting from the weighted-average inventory method to the last-in, first-out (LIFO) method (approximately ½–1 page, single-spaced).

Resources

To complete these tasks, you will need to utilize the following outside resources:

- Access the electronic IFRS standards (eIFRS) from the IFRS Foundation's website (www.ifrs.org). Click on Issued Standards, then on IFRS Standards. Click on the desired standard, and follow the instructions to register (free) and open the standard.
- Access the U.S. GAAP standards from the Financial Accounting Standards Board's (FASB's) Accounting Standards Codification.

In addition to exploring eIFRS and the FASB's Codification, you might find it helpful to review guidance on U.S. GAAP/IFRS differences provided by the larger public accounting firms. See, for example, Grant Thornton's *Comparison between U.S. GAAP and IFRS Standards* (April 2017), available at https://www.grantthornton.com/-/media/content-page-files/audit/pdfs/IFRS-news-2017/GTUS-standards-comparison.ashx.

IMPLEMENTATION

We assigned an earlier version of this case in different courses at different schools during the 2017–2018 academic year. One of the authors used it in a master's course focused on professional research in the financial accounting area. The other author used it in an undergraduate international accounting course. The authors assigned the case to a total of 74 students in the two courses. Both authors provided students with some background information on U.S. GAAP/IFRS differences prior to assigning the case through a combination of work in class and outside assignments. Both authors assigned the case as a group activity, to be

completed in groups of three or four students. In the graduate course, the students were assigned the full case, with the earlier version including a total of 15 adjustments. The students in the graduate course were also assigned the optional task of providing more detailed research documentation for three of the adjustments. In the undergraduate course, the students were given the same case, but assigned only 10 of the 15 adjustments, as they had not yet studied the U.S. GAAP treatments for the other five differences. The case accounted for 20% of the final grade in the graduate course, and 5% of the final grade in the undergraduate course.

We asked the students to evaluate the assignment. Most of them viewed the earlier version of the case as challenging. From reviewing their work, it was evident they struggled with several of the more complex adjustments. Despite the challenge, though, the students generally agreed the case helped them to improve their understanding of U.S. GAAP and IFRS, and the differences between the two regimes.

Based upon the feedback we received, we made a number of changes to reduce the length and complexity of the case, and to improve the clarity of the instructions and financial statement materials. We eliminated five of the U.S. GAAP/IFRS differences, including most of the more difficult ones. We continued to include adjustments to deferred income taxes, but eased the task considerably for students by providing them with the summary income tax entry. We shifted the focus to requiring that they think about why WoMBat's existing deferred income tax balances must be adjusted in this situation. In the earlier version, the students had some trouble with identifying the U.S. GAAP/IFRS differences. With the revisions, we provided more guidance on identifying the 10 differences, and we highlighted the related financial statement notes too (an IFRS requirement – see IAS 1 113). In WoMBat's notes, we added clear labeling of the additional information needed to convert the relevant account balances to a U.S. GAAP basis.

We continue to use this case during the 2018–2019 academic year. The author teaching the graduate course is assigning the full case, including the optional tasks, and the author teaching the undergraduate course is assigning all of the differences except for #4 (borrowing costs) and #9 (convertible bonds payable). The instructions to the undergraduate students inform them to proceed as if there are no differences between IFRS and U.S. GAAP for these two items. The authors are weighting the revised version of the case between 10% and 20% of their course grades.

CONCLUSION

This case gives students opportunity to add depth to their understanding of U.S. GAAP and IFRS through application of these standards to performing a conversion of a foreign acquisition target's IFRS financial statements to a U.S. GAAP basis. Students must review the target's IFRS financial statements and notes, and identify treatments that differ from U.S. GAAP requirements and allowances. They must research and document IFRS and U.S. GAAP treatments from the two sets of standards. In addition, they must formulate numeric adjustments to specific accounts to convert them to a U.S. GAAP basis, and then present the resulting U.S. GAAP financial statements. Beyond the technical accounting aspects, this case gives students some exposure to the electric vehicle and battery industries, and to specific companies and developments in these industries.

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EXHIBIT 1: WoMBat IFRS FINANCIAL STATEMENTS

Worldwide 'Motive Batteries (WoMBat)
Income Statement
Year Ended December 31, 2018

(amounts in U.S. dollars)

	Note		
Sales revenue			$ 78,200,000
Cost of sales <1,6>	B,C,E		(40,464,000)
Gross profit			37,736,000
Operating expenses:			
Distribution expenses		$ (3,173,000)	
Administrative expenses <6>	E	(19,816,000)	(22,989,000)
Operating profit			14,747,000
Other income:			
Interest revenue	D		372,000
Other expenses:			
Interest expense <4>	D	(694,000)	
Loss on inventory write-down <2>	C	(428,000)	
Impairment loss on equipment <5>	D	(1,167,000)	
Loss from lawsuit <8>	F	(2,520,000)	
Loss from restructuring <10>	H	(509,000)	(5,318,000)
Profit before tax			9,801,000
Income tax expense	A		(2,940,300)
Profit for the year			$ 6,860,700

Worldwide 'Motive Batteries (WoMBat)
Statement of Comprehensive Income
Year Ended December 31, 2018

(amounts in U.S. dollars)

	Note	
Profit for the year		$ 6,860,700
Other comprehensive income:		
Items that may be reclassified to profit or loss:		
Unrealized gain on available-for-sale securities (net of tax charge of $273,600)	A	638,400
Items that will not be reclassified to profit or loss:		
Unrealized gain on revaluation of land and buildings (net of tax charge of $471,000) <3>	A,D	1,099,000
Other comprehensive income for the year		1,737,400
Total comprehensive income for the year		$ 8,598,100

EXHIBIT 1: WoMBat IFRS FINANCIAL STATEMENTS (continued)

Worldwide 'Motive Batteries (WoMBat)
Statement of Changes in Equity
Year Ended December 31, 2018

(amounts in U.S. dollars)

	Note	Share Capital	Capital Reserves	Retained Earnings	Available-for-Sale Reserve	Revaluation Surplus	Total Equity
Balance, January 1, 2018 <3,6,7>		$ 600,000	$ 9,026,523	$ 8,050,200	$ 1,500,000	$ 2,100,000	$ 21,276,723
Profit for the year				6,860,700			6,860,700
Other comprehensive income <3>	D				638,400	1,099,000	1,737,400
Total comprehensive income		-	-	6,860,700	638,400	1,099,000	8,598,100
Dividends				(1,720,000)			(1,720,000)
Issuance of convertible bonds <9>	G		113,477				113,477
Balance, December 31, 2018		$ 600,000	$ 9,140,000	$ 13,190,900	$ 2,138,400	$ 3,199,000	$ 28,268,300

EXHIBIT 1: WoMBat IFRS FINANCIAL STATEMENTS (continued)

Worldwide 'Motive Batteries (WoMBat)
Balance Sheet
December 31, 2018

(amounts in U.S. dollars)

Assets

	Note			
Current assets:				
Cash and cash equivalents			$ 4,256,000	
Trade receivables			8,749,000	
Inventories <1>	C	$ 14,513,000		
Less: Allowance for write-down <2>	B,C	531,000	13,982,000	
Prepayments			1,681,000	
Total current assets				$ 28,668,000
Noncurrent assets:				
Property, plant and equipment <3,4,5>	D		23,968,000	
Intangible assets <6>	E		6,521,000	
Investments in marketable securities			9,397,000	
Total noncurrent assets				39,886,000
Total assets				$ 68,554,000

Liabilities and Equity

	Note			
Current liabilities:				
Trade and other payables			$ 6,084,000	
Current tax payable			1,942,100	
Financial liabilities			3,249,000	
Provisions <10>	H		1,326,000	
Total current liabilities				$ 12,601,100
Noncurrent liabilities:				
Financial liabilities <9>	G		18,739,967	
Provisions <7,8>	F		5,539,000	
Deferred tax liabilities	A		3,405,633	
Total noncurrent liabilities				27,684,600
Equity:				
Share capital			600,000	
Capital reserves <9>	G		9,140,000	
Retained earnings <6,7>			13,190,900	
Accumulated other comprehensive income <3>	D		5,337,400	
Total equity				28,268,300
Total liabilities and equity				$ 68,554,000

EXHIBIT 2: EXCERPTS FROM WoMBat FINANCIAL STATEMENT NOTES

(plus additional information needed for conversion to U.S. GAAP, shown in italics)

The accompanying financial statements for Worldwide 'Motive Batteries (WoMBat) ("the Company") were prepared in accordance with International Financial Reporting Standards (IFRS).

The additional information needed to convert WoMBat's IFRS balances to a U.S. GAAP basis is provided in italics at the end of each Note.

Note A – Income Taxes

For financial reporting purposes, the Company applies a 30% tax rate to all items, whether included in profit or in other comprehensive income (OCI). This tax rate is also assumed for future periods, affecting recorded amounts for deferred tax assets and liabilities.

Relevant Additional U.S. GAAP Information: WoMBat is subject to a single national (South Korean) taxing authority. Artic Automotive and potential U.S. company acquisition targets also assume a current and deferred income tax rate of 30%, applicable to all items of net income and OCI. Some of the adjustments for converting WoMBat from IFRS to U.S. GAAP will affect the WoMBat asset and liability balances, as well as book/tax differences. For simplification, all deferred tax adjustments are reflected by WoMBat as a net liability balance, with deferred tax debit adjustments decreasing the balance and deferred tax credit adjustments increasing the balance.

Arctic Automotive tax experts have analyzed separately the December 31, 2018 tax positions of WoMBat and have identified the tax effects of converting to U.S. GAAP as summarized in the following entry:

Account Name	*Debit Amount*	*Credit Amount*
Income Tax Expense	*$ 699,600*	
Deferred Tax Liabilities	*984,333*	
Capital Reserves		*$ 48,633*
Retained Earnings		*264,300*
Revaluation Surplus		*900,000*
Unrealized Gain on Revaluation		*471,000*

As such, the tax effects of each of the IFRS-to-U.S. GAAP adjustments need not be considered; but the tax effects summarized in the above entry do need to be reflected in the U.S. GAAP-basis financial statements for WoMBat.

Note B – Cost of Sales

The Company recognises cost of sales at the lower of cost or net realisable value for inventory sold during the period. Where the recorded amount of inventory has previously been reduced to net realisable value, an allowance for inventory write-down is recognised (see Note C for additional information); when such inventory is sold, the associated allowance balance is eliminated so that cost of sales is not overstated.

Further, where the Company incurs costs in the development of intangible assets that ultimately affect manufactured products, the amortisation of the intangible assets adds to cost of sales. Such amortisation amounted to $394,000 during 2018 (see Note E for additional information).

EXHIBIT 2: EXCERPTS FROM WoMBat FINANCIAL STATEMENT NOTES (continued)

Note C – Inventories

The Company utilises the weighted-average inventory cost flow assumption. The Company reports inventories at the lower of cost or net realisable value, applied at the individual inventory item level. Where the net realisable value has declined below the weighted-average cost, often due to obsolescence, a write-down is recognised. For the year ended December 31, 2018, transfers to cost of sales for written-down goods sold amounted to $309,000, and additional inventory write-downs for the Company amounted to $428,000. The table below provides a summary of activity during 2018 for the allowance for inventory write-downs:

Allowance Balance, January 1, 2018	$ 412,000
Transfers to Cost Sales	(309,000)
Additional Write-Downs	428,000
Allowance Balance, December 31, 2018	$ 531,000

Relevant Additional U.S. GAAP Information: Arctic Automotive and potential U.S. company acquisition targets use the last-in, first-out (LIFO) inventory cost flow assumption, reporting inventory at the lower of cost or market value. Market value is defined as replacement cost, although restricted to not exceed net realizable value or be less than net realizable value minus a normal profit. Prospectively applying LIFO for WoMBat would result in a gross inventory balance as of December 31, 2018 of $13,789,000.

Lower of cost or market under a prospective LIFO assumption would have resulted in $154,000 lesser inventory write-downs for WoMBat during 2018 (with no change to the beginning allowance balance).

Note D – Property, Plant, and Equipment

The Company records property, plant, and equipment (PP&E) assets initially at cost, and depreciates such assets using the straight-line method over appropriate estimated useful lives. For assets being constructed, appropriate borrowing costs are capitalised. The company typically obtains borrowings directly in support of PP&E assets to be constructed, usually in advance of the start of construction. As such, the capitalised borrowing costs for such assets are computed as the actual interest cost incurred on such construction loans less the interest earned on idle proceeds invested until needed. During 2018, related to expansion of a manufacturing facility, the Company capitalised $221,000 of borrowing costs, after netting out $32,125 of interest earned on idle proceeds invested.

For land and buildings, where a fair value can be reliably determined, the revaluation model is utilised. That model involves, at regular intervals, comparing the carrying amount to the fair value for each asset within the land and buildings class. Increases in value are generally recognised as OCI whereas decreases in value are generally recognised through profit or loss, unless such increases or decreases are reversals of prior valuation changes for the same asset. Upon disposal of the related asset (which is yet to occur for the Company for any land or building assets), any accumulated gain on revaluation is reclassified from the revaluation reserve directly to retained earnings. As of December 31, 2018, land and buildings had a fair value of $16,322,000, as compared to original cost less accumulated depreciation (for buildings) of $11,752,000. During 2018, the Company recognised $1,099,000 of revaluation gains related to land and buildings, net of additional tax charges of $471,000.

At the end of each period, all other PP&E assets recorded at original cost are evaluated for possible impairment if any indicator of such impairment exists. Recent technological changes led to uncertainty about the value and usefulness for certain equipment assets associated with batteries being de-emphasised by the Company. The carrying amount for such equipment, after deducting accumulated depreciation, was $3,300,000 as of December 31, 2018, before recognition of any impairment. The estimated recoverable amount for these assets (i.e., the higher of their fair value less disposal costs and their value in use) was $2,133,000 as of December 31, 2018. The excess of the carrying

amount over the recoverable amount resulted in an impairment loss on the equipment of $1,167,000 being recognised in 2018.

EXHIBIT 2: EXCERPTS FROM WoMBat FINANCIAL STATEMENT NOTES (continued)

Note D – Property, Plant, and Equipment (continued)

Relevant Additional U.S. GAAP Information: WoMBat meets all of the conditions for capitalizing interest on facility construction activities during 2018. Arctic Automotive determined that the interest on the weighted-average accumulated expenditures for the year would have been $143,000.

WoMBat intends to continue using the equipment assets affected by the technological issues. The estimated future cash flows (undiscounted) for this equipment totaled $3,395,000 as of December 31, 2018, and the estimated fair value of the equipment was $1,955,000 as of the same date.

Note E – Intangible Assets

The Company is involved in research and development activities associated with current lithium-ion technologies and advanced solid-state battery technologies. Research and development costs (with the exception of certain qualifying development costs discussed below) are recognised as administrative expenses when incurred and amounted to $4,128,000 during 2018. Development costs associated with improving the performance and safety of lithium-ion batteries are properly recognised as an intangible asset. Such capitalised development costs are ultimately associated with manufactured products; therefore, the intangible asset is amortised into cost of sales. During 2018, amortisation of the development intangible asset totaled $394,000. The following table summarises the activity for the development asset during 2018:

Development Asset Balance, January 1, 2018	$ 1,773,000
Additional Development Costs Incurred	610,000
Amortisation to Cost of Sales	(394,000)
Development Asset Balance, December 31, 2018	$ 1,989,000

Relevant Additional U.S. GAAP Information: Applying IFRS, WoMBat distinguishes between advanced development of established technologies (e.g., lithium-ion batteries) and preliminary development of technologies not yet established (e.g., solid-state batteries).

Note F – Provisions and Contingencies

The Company is identified as a defendant, individually and/or with other parties, in various lawsuits initiated by current and former customers, consumers, and/or employees. Although the ultimate outcome of these lawsuits is currently indeterminable, the Company estimates that, for certain claims, it is more likely than not that an unfavorable judgment or settlement will result.

In *Kim v. Worldwide 'Motive Batteries*, the claimant, an end consumer, alleges that a battery manufactured by the Company caught fire while being charged in a garage and that the fire resulted in significant property damage. The plaintiff is also requesting remuneration for temporary housing costs and other inconveniences. Although no responsibility is being assumed, WoMBat concluded in 2017 that it is more likely than not that the Company will suffer a loss. WoMBat recognised a provision and loss during 2017 of $892,000; there were no changes in the expected outcome as of December 31, 2018.

In *Lim Motors v. Worldwide 'Motive Batteries*, the claimant, an auto dealer, alleges that battery and related vehicle failures caused reputational damage and substantial loss of sales. This claim was filed early in 2018, and the

Company estimates a high likelihood of an unfavorable outcome. As such, the Company has recognised a provision and loss amounting to $2,520,000.

EXHIBIT 2: EXCERPTS FROM WoMBat FINANCIAL STATEMENT NOTES (continued)

Note F – Provisions and Contingencies (continued)

For all other pending claims, the Company believes that the likelihood of an unfavorable outcome is small.

Relevant Additional U.S. GAAP Information: WoMBat estimates the likelihood of an unfavorable outcome from the Kim case to be 55%.

As for the Lim Motors case, WoMBat estimates the likelihood of an unfavorable outcome to be 80%. The range of possible outcomes for this case, each of which is equally likely, is $1,000,000 to $5,002,720. WoMBat believes the judgment or settlement of the Lim Motors case will occur in approximately three years, though the actual period could be significantly longer or shorter. WoMBat utilizes a discount rate of 6% for collections and payments expected to occur in the more distant future ($3,001,360 × TVM factor of 0.83962 = $2,520,000).

Note G – Convertible Bonds Payable

On December 31, 2018, the Company issued convertible bonds payable with a face value of $1,390,000 for proceeds of $1,347,500. The bonds have a stated interest rate of 4%, and each bond certificate is convertible at the holder's discretion into 50 shares of the Company's $1 par-value common stock. The fair value of similar bonds without the conversion feature was estimated at $1,185,390 on the issue date. This value difference of $162,110, net of deferred tax effects, is appropriately included in capital reserves.

Relevant Additional U.S. GAAP Information: Arctic Automotive believes the conversion feature described above would have been considered non-beneficial at the time of issuance of the convertible bonds payable.

Note H – Restructuring Charge

In November 2018, the Company announced plans to end a research and development project related to solar power generation and storage. The Company acknowledged that it had not made sufficient progress on this project, and now wishes to focus on the core technology of lithium-ion batteries and improving their performance. The Company does not plan to redeploy many of the assets or personnel used in the solar power project. As a result, the Company expects to incur significant costs for asset disposals and employee severance benefits.

WoMBat believes it has satisfied the conditions for recognising a constructive obligation. Thus, the Company reported a provision for restructuring of $509,000 as of December 31, 2018. WoMBat has begun efforts to dispose of the assets used in the project. The Company expects to complete all aspects of the restructuring, including disposals of assets and payments of severance benefits, by December 31, 2019.

Relevant Additional U.S. GAAP Information: Although WoMBat has commenced the restructuring process, it has not yet made legally binding offers to the individuals likely to be affected by elimination of the solar power project. WoMBat intends to make binding offers to individuals, and receive the acceptances thereon, by the December 31, 2019 projected completion date.

EXHIBIT 3: TEMPLATE FOR IFRS-TO-U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 1 – Pertains to Inventories		
ADJ 1 ENTRY:		
Adjustment Description	**Treatment under IFRS**	**Treatment under U.S. GAAP**
ADJ 2 – Pertains to Inventories		
ADJ 2 ENTRY:		

EXHIBIT 3: TEMPLATE FOR IFRS-TO-U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 3 – Pertains to Property, Plant, and Equipment		
ADJ 3 ENTRY:		
Adjustment Description	**Treatment under IFRS**	**Treatment under U.S. GAAP**
ADJ 4 – Pertains to Property, Plant, and Equipment		
ADJ 4 ENTRY:		

EXHIBIT 3: TEMPLATE FOR IFRS-TO-U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 5 – Pertains to Property, Plant, and Equipment		
ADJ 5 ENTRY:		
Adjustment Description	**Treatment under IFRS**	**Treatment under U.S. GAAP**
ADJ 6 – Pertains to Intangible Assets		
ADJ 6 ENTRY:		

EXHIBIT 3: TEMPLATE FOR IFRS-TO-U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 7 – Pertains to Provisions		
ADJ 7 ENTRY:		
Adjustment Description	**Treatment under IFRS**	**Treatment under U.S. GAAP**
ADJ 8 – Pertains to Provisions		
ADJ 8 ENTRY:		

EXHIBIT 3: TEMPLATE FOR IFRS-TO-U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 9 – Pertains to Financial Liabilities		
ADJ 9 ENTRY:		
Adjustment Description	**Treatment under IFRS**	**Treatment under U.S. GAAP**
ADJ 10 – Pertains to Provisions		
ADJ 10 ENTRY:		

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 1 – Inventory Cost Flow Assumption	Either FIFO or the weighted-average method must be used to determine the cost of inventory, per IAS 2 ¶ 25; LIFO is not identified as an allowable method.	Per ASC 330-10-30-9, any of several cost flow assumptions can be used, including LIFO. Prospective application of LIFO (allowable per ASC 250-10-45-7) for WoMBat would result in a $724,000 reduced inventory cost (from $14,513,000 gross to $13,789,000 gross) and increased cost of sales.
ADJ 1 ENTRY:	DR Cost of Sales $ 724,000 CR Inventories $ 724,000 DR Deferred Tax Liabilities $ 217,200 CR Income Tax Expense $ 217,200	
ADJ 2 – Measure of Value for Inventory Write-down Procedure	Per IAS 2 ¶ 9, inventories are to be reported at the lower of cost or net realisable value (NRV). NRV is further defined as estimated selling price for the goods less estimated costs to complete and/or sell the goods.	If LIFO is used, per ASC 330-10-35-4&5, inventories must be reported at the lower of cost or market. *Market* means replacement cost, though it should not exceed NRV or be less than NRV minus normal profit. Applying LIFO prospectively, and using market as the measure of value, the inventory write-down WoMBat took under IFRS must be reduced by $154,000.
ADJ 2 ENTRY:	DR Allowance for Inventory Write-Down $ 154,000 CR Loss on Inventory Write-Down $ 154,000 DR Income Tax Expense $ 46,200 CR Deferred Tax Liabilities $ 46,200	

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 3 – Revaluation of Property, Plant, and Equipment	Per IAS 16 ¶ 31, the revaluation model can be selected for property, plant, and equipment (PP&E) assets for which reliable fair values can be determined. Utilizing the revaluation model will result in the recognition of periodic fair value gains and losses related to affected assets. Per IAS 16 ¶ 39, the revaluation gains are reported as other comprehensive income (OCI) and accumulated in equity, until disposal of the asset, as revaluation surplus.	PP&E assets are reported at historical cost, per ASC 360-10-30-1. There is no option to adjust to fair value. The beginning balance for revaluation surplus (accumulated OCI) as well as revaluation gains (OCI) in 2018 for WoMBat must be eliminated, including income tax effects (i.e., NOT net of income tax effects) (30%). As the WoMBat revaluations of PP&E involved net gains, the recorded asset amounts must be reduced.

ADJ 3 ENTRY:

DR Revaluation Surplus	$3,000,000	
DR Unrealized Gain on Revaluation	1,570,000	
CR Property, Plant, and Equipment		$4,570,000
DR Deferred Tax Liabilities	$1,371,000	
CR Revaluation Surplus		$ 900,000
CR Unrealized Gain on Revaluation		471,000

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 4 – Capitalization of Borrowing Costs	Per IAS 23 ¶ 8, companies must capitalize borrowing costs related to construction of an asset, such as a building. For project-specific borrowings, the company must capitalize the actual interest cost incurred, less any income earned on the temporary investment of idle funds. The capitalization is tied to borrowing, not spending (IAS 23 ¶ 12).	ASC 835-20-05-1 also requires capitalization of interest costs during the construction of an asset. In all cases, though, the amount to be capitalized is tied to the spending on the project, not the borrowings. A company must compute the amount of weighted-average accumulated expenditures for the period and use that amount to determine the interest to be capitalized (ASC 835-20-30-3). The interest earned on idle funds generally is not considered in the calculation of capitalized interest (ASC 835-20-30-10). Considering each of these separate differences, WoMBat would need to recognize $110,125 of additional interest expense as well as $32,125 of additional interest revenue.

ADJ 4 ENTRY:

DR Interest Expense	$ 110,125	
CR Property, Plant, and Equipment		$ 78,000
CR Interest Revenue		32,125
DR Deferred Tax Liabilities	$ 23,400	
CR Income Tax Expense		$ 23,400

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 5 – Recognition of Impairment of Fixed Assets	An impairment for a finite-life asset (such as PP&E assets) exists if the carrying amount for any such asset exceeds its recoverable amount, per IAS 36 ¶ 8. The impairment procedure is indicator-based (IAS 36 ¶ 12-14). The recoverable amount is the larger of the asset's fair value less costs to sell or its value in use (discounted estimated future cash flows) (IAS 36 ¶ 6).	ASC 360-10-35-17 describes a slightly different, two-step approach. That approach involves determining if an impairment exists based on a comparison between the carrying amount for the asset and the undiscounted future cash flows (i.e., whether the carrying amount is "recoverable"). If an impairment is deemed to exist, the amount of the impairment loss is determined by comparing the carrying amount of the asset to the fair value, which could be approximated as the discounted present value of the estimated future cash flows. Because the carrying amount for the relevant WoMBat equipment is recoverable through undiscounted future cash flows, no impairment loss should be recognized.
ADJ 5 ENTRY:	DR Property, Plant, and Equipment CR Impairment Loss on Equipment	$1,167,000 $1,167,000
	DR Income Tax Expense CR Deferred Tax Liabilities	$ 350,100 $ 350,100

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 6 – Capitalization and Amortization of Development Costs	Per IAS 38 ¶ 57, qualifying development costs related to intangible assets are capitalized. The qualifying costs consist of those incurred once a project meets a set of six criteria that establish a strong likelihood of future benefits. Development cost assets likely are viewed as finite-life, meaning the asset must be amortized (IAS 38 ¶ 89). Relevant factors that indicate a finite life are provided in IAS 38 ¶ 90(b)-(e). If a development cost asset contributes to the production of inventory, IFRS calls for the amortization of the asset to be reflected in the inventory account and ultimately cost of goods sold (IAS 38 ¶ 99).	Development costs generally must be expensed as incurred, per ASC 730-10-25-1. An exception exists for materials, fixed assets, and computer software that have an alternative future use (ASC 730-10-25-2 and ASC 730-10-25-3). There is no information to suggest that this exception applies to WoMBat. Given that development costs normally are expensed as incurred, there is little basis for reporting the expense as part of cost of goods sold. The prior capitalized asset must be subtracted from beginning retained earnings (retroactive adjustment), along with removal of the intangible asset, the current period development costs, and current period cost of sales.

ADJ 6 ENTRY:

DR Retained Earnings	$1,773,000	
DR Research and Development Expense	610,000	
CR Development Asset		$1,989,000
CR Cost of Sales		394,000
DR Deferred Tax Liabilities	$ 596,700	
CR Retained Earnings		$ 531,900
CR Income Tax Expense		64,800

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 7 – Recognition of Uncertain Liabilities	Recognition of a contingent liability (future outflow of resources) is required when the payment is probable (IAS 37 ¶ 14), which is further defined as more likely than not (MLTN) (IAS 37 ¶ 23). MLTN means a likelihood exceeding 50%.	The threshold for recognition of contingent losses is also described as "probable" in ASC 450-20-25-2. However, the ASC Glossary defines the term as "likely to occur", which appears to be a higher threshold than MLTN (ASC 450-20-20). In practice, "probable" is perceived as a likelihood of 70% or more (Ernst & Young 2018, p. 51). Thus, WoMBat would need to de-recognize the contingent loss (retained earnings) and liability for the *Kim* case.
ADJ 7 ENTRY:	DR Provision for Lawsuits (Noncurrent) $ 892,000 CR Retained Earnings $ 892,000 DR Retained Earnings $ 267,600 CR Deferred Tax Liabilities $ 267,600	

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 8 – Measurement of Uncertain Liabilities	If the amount of an expected loss cannot be narrowed any further than a range of equally likely loss amounts, the midpoint of the range should be accrued (IAS 37 ¶ 39). Further, if the future cash outflows associated with a provision involve a material time value of money effect, the future cash flows must be discounted (IAS 37 ¶¶ 45-46).	If the amount of an expected loss falls within a range of equally likely amounts, the minimum of the range should be accrued (ASC 450-20-30-1). ASC 450-20 does not address discounting of future cash flows for time value. The discounting guidance is context-specific. For example, the initial measurement guidance on asset retirement obligations calls for discounting in that context (ASC 410-20-30-1). Generally, though, discounting tends to be done only when the timing of the future cash flows is fixed (Grant Thornton 2017, p. 69). For WoMBat, the provision for the *Lim Motors* case must be reduced from $2,520,000 to $1,000,000, the undiscounted minimum estimated loss.
ADJ 8 ENTRY:	DR Provision for Lawsuits (Noncurrent) $1,520,000 CR Loss from Lawsuit $1,520,000 DR Income Tax Expense $ 456,000 CR Deferred Tax Liabilities $ 456,000	

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 9 – Recognition of Convertible Bonds Payable	Issuers of compound financial instruments must separately account for the debt and equity aspects (IAS 32 ¶¶ 28-29). The two aspects must be recognized as distinct components at the time of issuance. The debt aspect should be allocated its estimated fair value, and the equity aspect should be allocated the residual amount (IAS 32 ¶¶ 31-32).	For issuers, convertible securities that do not provide the holder with an inducement to convert immediately are considered to have a conversion feature that is not beneficial (ASC 470-20-25-10). The holder's decision to convert depends upon the value of the issuer's shares increasing in the future. Such securities, including convertible bonds, are recognized initially as a liability. No recognition is given to the equity component until an actual conversion occurs (ASC 470-20-25-12). WoMBat must shift the conversion component from equity to liabilities.

ADJ 9 ENTRY:	DR Capital Reserves	$ 162,110	
	CR Financial Liabilities (Noncurrent)		$ 162,110
	DR Deferred Tax Liabilities	$ 48,633	
	CR Capital Reserves		$ 48,633

SUGGESTED SOLUTION: (1-3) IFRS / U.S. GAAP ADJUSTMENTS AND LITERATURE CITATIONS (continued)

Adjustment Description	Treatment under IFRS	Treatment under U.S. GAAP
ADJ 10 – Recognition of Restructuring Provisions	Companies are required to recognize liabilities arising from both legal and constructive obligations (IAS 37 ¶ 14(a)). IAS 37 ¶ 72 notes two conditions for recognizing a constructive obligation for restructuring: (1) a company has developed a formal plan of restructuring, and (2) the company has created an expectation that it will follow through and implement the plan. The company meets the second condition through either beginning to implement the plan or announcing the plan details to those likely to be affected (IAS 37 ¶ 73). There is no requirement to make legally binding offers to specific parties.	Only legal obligations are recognized. For example, a company is not permitted to recognize a liability for an exit or disposal activity until it is essentially required to commit to a future outflow of resources. An entity must have "little or no discretion to avoid the future transfer …" (ASC 420-10-25-2). As such, WoMBat must de-recognize the loss and liability associated with the restructuring.

ADJ 10 ENTRY:

DR Provision for Restructuring (Current)	$ 509,000	
CR Loss from Restructuring		$ 509,000
DR Income Tax Expense	$ 152,700	
CR Deferred Tax Liabilities		$ 152,700

REFERENCES

Ernst & Young. 2018. *US GAAP versus IFRS: The Basics* (February). Ernst & Young LLP. Available at: https://www.ey.com/Publication/vwLUAssetsAL/IFRSBasics_00901-181US_23February2018/$FILE/IFRSBasics_00901-181US_23February2018.pdf.

Grant Thornton. 2017. *Comparisons between U.S. GAAP and IFRS Standards* (April). Grant Thornton LLP. Available at: https://www.grantthornton.com/-/media/content-page-files/audit/pdfs/IFRS-news-2017/GTUS-standards-comparison.ashx.

SUGGESTED SOLUTION: (4) U.S. GAAP-BASIS FINANCIAL STATEMENTS

Worldwide 'Motive Batteries (WoMBat)
Income Statement
Year Ended December 31, 2018

(amounts in U.S. dollars)

Sales revenue		$ 78,200,000
Cost of sales <1,6>		(40,794,000)
Gross profit		37,406,000
Operating expenses:		
Distribution expenses	$ (3,173,000)	
Administrative expenses <6>	(20,426,000)	(23,599,000)
Operating profit		13,807,000
Other income:		
Interest revenue <4>		404,125
Other expenses:		
Interest expense <4>	(804,125)	
Loss on inventory write-down <2>	(274,000)	
Loss from lawsuit <8>	(1,000,000)	(2,078,125)
Profit before tax		12,133,000
Income tax expense <1,2,4,5,6,8,10>		(3,639,900)
Profit for the year		$ 8,493,100

SUGGESTED SOLUTION: (4) U.S. GAAP-BASIS FINANCIAL STATEMENTS (continued)

Worldwide 'Motive Batteries (WoMBat)
Statement of Comprehensive Income
Year Ended December 31, 2018

(amounts in U.S. dollars)

Profit for the year	$ 8,493,100
Other comprehensive income:	
Unrealized gain on available-for-sale securities (net of tax charge of $273,600)	638,400
Total comprehensive income for the year	$ 9,131,500

Worldwide 'Motive Batteries (WoMBat)
Statement of Changes in Equity
Year Ended December 31, 2018

(amounts in U.S. dollars)

	Common Stock	*Additional Paid-In Capital*	*Retained Earnings*	*Available-for-Sale Reserve*	*Total Equity*
Balance, January 1, 2017 <6,7>	$ 600,000	$ 9,026,523	$ 7,433,500	$ 1,500,000	$ 18,560,023
Profit for the year			8,493,100		8,493,100
Other comprehensive income				638,400	638,400
Total comprehensive income	-	-	8,493,100	638,400	9,131,500
Dividends			(1,720,000)		(1,720,000)
Balance, December 31, 2017	$ 600,000	$ 9,026,523	$ 14,206,600	$ 2,138,400	$ 25,971,523

SUGGESTED SOLUTION: (4) U.S. GAAP-BASIS FINANCIAL STATEMENTS (continued)

Worldwide 'Motive Batteries (WoMBat)
Balance Sheet
December 31, 2018

(amounts in U.S. dollars)

Assets			
Current assets:			
Cash and cash equivalents		$ 4,256,000	
Trade receivables		8,749,000	
Inventories <1>	$ 13,789,000		
Less: Allowance for write-down <2>	377,000	13,412,000	
Prepayments		1,681,000	
Total current assets			$ 28,098,000
Noncurrent assets:			
Property, plant and equipment <3,4,5>		20,487,000	
Intangible assets <6>		4,532,000	
Investments in marketable securities		9,397,000	
Total noncurrent assets			34,416,000
Total assets			$ 62,514,000
Liabilities and Equity			
Current liabilities:			
Trade and other payables		$ 6,084,000	
Current tax payable		1,942,100	
Financial liabilities		3,249,000	
Provisions <10>		817,000	
Total current liabilities			$ 12,092,100
Noncurrent liabilities:			
Financial liabilities <9>		18,902,077	
Provisions <7,8>		3,127,000	
Deferred tax liabilities <1,2,3,4,5,6,7,8,9,10>		2,421,300	
Total noncurrent liabilities			24,450,377
Equity:			
Common stock		600,000	
Additional paid-in capital <9>		9,026,523	
Retained earnings <6,7>		14,206,600	
Accumulated other comprehensive income <3>		2,138,400	
Total equity			25,971,523
Total liabilities and equity			$ 62,514,000

Capitalization of Borrowing Costs (ADJ 4)

IFRS provides the following guidance:

> An entity shall capitalise borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. An entity shall recognise other borrowing costs as an expense in the period in which it incurs them.
>
> *[IAS 23 ¶ 8]*

Per Note D (*Property, Plant, and Equipment*), Worldwide 'Motive Batteries (WoMBat) typically obtains debt in direct support of PP&E construction, and in advance of the start of construction. More specific related guidance on the process for identifying and capitalizing the borrowing costs is provided:

> To the extent that an entity borrows funds specifically for the purpose of obtaining a qualifying asset, the entity shall determine the amount of borrowing costs eligible for capitalisation as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings.
>
> *[IAS 23 ¶ 12]*

WoMBat complied with this guidance during 2018 by capitalizing $221,000 of borrowing costs incurred, after netting out $32,125 of interest earned on idle debt proceeds that were invested ($253,125 total interest cost incurred).

U.S. GAAP follows a more complicated process, whereby the amount of interest to be capitalized is determined by the interest that would have been incurred if the company had borrowed incrementally as construction costs are incurred:

> The amount of interest cost to be capitalized for qualifying assets is intended to be that portion of the interest cost incurred during the assets' acquisition periods that theoretically could have been avoided (for example, by avoiding additional borrowings or by using the funds expended for the assets to repay existing borrowings) if expenditures for the assets had not been made. …
>
> *[ASC 835-20-30-2]*

Any interest earned on idle proceeds generally is not considered in determining interest to be capitalized (ASC 835-20-30-10). Per Note D additional disclosure, had WoMBat obtained letter-of-credit financing for the construction rather than an upfront loan, only $143,000 of interest costs would have been incurred and no interest would have been earned on investment of idle proceeds (i.e., there would be no idle proceeds).

SUGGESTED SOLUTION: (OPTIONAL TASKS) DETAILED DOCUMENTATION (continued)

To convert to U.S. GAAP, interest capitalized into PP&E needs to be reduced by $78,000. Also, the $32,125 of interest earned should be recognized as income rather than being netted out of the capitalized interest. With only $143,000 of interest expense being capitalized, the excess $110,125 must be expensed.

DR Interest Expense	$ 110,125	
CR Property, Plant, and Equipment		$ 78,000
CR Interest Revenue		32,125

With expenses increasing by $110,125 but revenues only increasing by $32,125, income tax expense would decline by $23,400 ($78,000 × 30%), offset by deferred tax liabilities (as there is no change in tax guidance).

DR Deferred Tax Liabilities	$ 23,400	
CR Income Tax Expense		$ 23,400

SUGGESTED SOLUTION: (OPTIONAL TASKS) DETAILED EXPLANATIONS

(i) Impacts of Adjustments on Deferred Tax Position

Differences between financial accounting and tax accounting fall into two categories, often referred to as permanent differences or temporary differences. These differences are described within U.S. GAAP:

> There are two primary objectives related to accounting for income taxes:
>
> (a) To recognize the amount of taxes payable or refundable for the current year
> (b) To recognize deferred tax liabilities and assets for the future tax consequences of events that have been recognized in an entity's financial statements or tax returns.
>
> As it relates to the second objective, some events do not have tax consequences. Certain revenues are exempt from taxation and certain expenses are not deductible. In some tax jurisdictions, for example, interest earned on certain municipal obligations is not taxable and fines are not deductible.
>
> *[ASC 740-10-10-1]*

As described, permanent differences do not have tax consequences and therefore do not result in the recognition of deferred tax items; that is, such differences will never reverse and therefore will not impact future tax payments or refunds. Further guidance regarding the treatment of temporary differences is provided:

> Conceptually, a deferred tax liability or asset represents the increase or decrease in taxes payable or refundable in future years as a result of temporary differences and carryforwards at the end of the current year…
>
> *[ASC 740-10-10-3]*

> A deferred tax liability or asset shall be recognized for the estimated future tax effects attributable to temporary differences and carryforwards.
>
> *[ASC 740-10-25-1(b)]*

Temporary differences in effect arise because of differences between the carrying amount and the tax basis for certain assets and liabilities (ASC 740-10-25-20). Determination of the deferred tax asset (DTA) or deferred tax liability (DTL) amount is based on the tax rate that is expected to be in effect when the temporary difference is expected to reverse (i.e., when the DTA or DTL is expected to be settled or realized) (ASC 740-10-30-8).

Similar guidance is provided for IFRS (IAS 12 ¶¶ 5, 15, 17, 22, 24, 27, and 47).

Per Note A, Worldwide 'Motive Batteries (WoMBat) is subject to a single, South Korean taxing authority. Converting the financial statements from IFRS to U.S. GAAP has no influence on the taxing authority or the results of tax accounting. However, the financial accounting is

affected. Any such conversion therefore either creates new differences between financial accounting and tax accounting and/or eliminates prior existing differences between financial accounting and tax accounting. Accordingly, each adjustment to convert from IFRS to U.S. GAAP must result in an adjustment to the (net) DTL balance, using the estimated 30% tax rate. Depending on the particular adjustment involved, the DTL adjustment is offset by (1) for current period items, either income tax expense or an other comprehensive income (OCI) account and/or (2) for prior period items, either retained earnings or a reserve / accumulated OCI account.

(ii) No Retroactive Adjustment for Converting to LIFO

Under U.S. GAAP, changing from one inventory method to another would normally be classified as a change in accounting principle:

> **Change in Accounting Principle**
>
> A change from one generally accepted accounting principle to another generally accepted accounting principle when there are two or more generally accepted accounting principles that apply or when the accounting principle formerly used is no longer generally accepted. A change in the method of applying an accounting principle also is considered a change in accounting principle.
>
> *[ASC 250-10-20 Glossary]*

Changes in accounting principle typically require retroactive adjustment:

> An entity shall report a change in accounting principle through retrospective application of the new accounting principle to all prior periods, unless it is impracticable to do so. …
>
> *[ASC 250-10-45-5]*

The final caveat of the guidance above, suggesting that there may be conditions where a retroactive adjustment is impractical, warrants further exploration:

> If it is impracticable to determine the cumulative effect of applying a change in accounting principle to any prior period, the new accounting principle shall be applied as if the change was made prospectively as of the earliest date practicable. See Example 1 … for an illustration of a change from the first-in, first-out (FIFO) method of inventory valuation to the last-in, first-out (LIFO) method.
>
> *[ASC 250-10-45-7]*

ASC 250-10-45-9 provides conditions under which a retrospective adjustment might be impractical. Changing inventory methods (from FIFO) to LIFO is specifically cited as an example where it may be impractical:

SUGGESTED SOLUTION: (OPTIONAL TASKS) DETAILED EXPLANATIONS (continued)

> This Example illustrates the guidance in paragraphs 250-10-45-9 through 45-10. Assume Entity A changed its accounting principle for inventory measurement from FIFO to LIFO effective January 1, 20X4. Entity A reports its financial statements on a calendar year-end basis and had used the FIFO method since its inception. Entity A determined that it is impracticable to determine the cumulative effect of applying this change retrospectively because records of inventory purchases and sales are no longer available for all prior years. However, Entity A has all of the information necessary to apply the LIFO method on a prospective basis beginning in 20X1. Therefore, Entity A should present prior periods as if it had carried forward the 20X0 ending balance in inventory (measured on a FIFO basis) and begun applying the LIFO method to its inventory beginning January 1, 20X1. …
>
> *[ASC 250-10-55-12]*

For a company that has been in operation for many years, it would not be uncommon for there to be insufficient records available to retroactively adjust to LIFO. It is not clear for how long WoMBat has been in operation, but there is no indication that data or records are available to allow a retroactive adjustment.