

Bleak Weather for Sun-Shine AG: A Case Study of Impairment of Assets

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ABSTRACT: This case originates from a real-life business situation and illustrates the application of impairment tests in accordance with IFRS and U.S. GAAP. In the first part of the case study, students examine conceptual questions of impairment tests under IFRS and U.S. GAAP with respect to applicable accounting standards, definitions, value concepts, and frequency of application. In addition, the case encourages students to discuss the impairment regime from an economic point of view. The second part of the instructional resource continues to provide instructors with the flexibility of applying U.S. GAAP and/or IFRS when students are asked to test a long-lived asset for impairment and, if necessary, allocate any potential impairment. This latter part demonstrates that impairment tests require professional judgment that students are to exercise in the case.

Keywords: impairment of assets; IFRS; U.S. GAAP; professional judgment.

THE CASE

Introduction

On a rainy and gray December morning in 20X1, Thomas Schmidt enters the offices of Sun-Shine AG on the 20th floor of the “Opera Tower” in Frankfurt, Germany.¹ He has been the accounting manager of Sun-Shine for several years and enjoys working for a company in the solar industry.

Today, however, Thomas appears a little tense as he enters the office. He has been thinking for a while about the analyst conference that is set for the next morning and for which he still needs to brief Sun-Shine’s CEO, Sebastian Albers. When walking down the corridor, Thomas is stopped by Daniela Gruber, his assistant. Daniela is an International Financial Reporting Standards (IFRS) specialist and has been with Sun-Shine for four years. Typically a rather

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¹ All names, dates, and locations are fictitious, as are the “characters” involved in the case.

relaxed person, she appears very anxious today because of a message she received the previous night from California-Sun Corp., Sun-Shine's U.S.-based subsidiary, which was acquired six months ago and mainly produces solar modules for the U.S. market. Daniela tells her boss that the state government of California has unexpectedly decided to cut its subsidies of solar installations by 50 percent. Due to the financial and economic crisis, the state of California has been forced to lower its budget deficit, with the subsidy cut being its latest measure. Daniela says, "California-Sun now expects a severe decline in demand for solar modules and a significant drop in sales. Their assets may need to be written down, which would certainly ruin our numbers this year."

Background

Sun-Shine was founded ten years ago by its current CEO, Sebastian Albers, who expected to profit from the increasing interest in renewable energies from both the German government and the German public. Still headquartered in the city of Frankfurt where the company was founded, Sun-Shine has ever since specialized in the production of solar modules and now runs several solar parks, mainly in the sunnier Mediterranean countries of Italy and Spain. In recent years, Sun-Shine recorded a tremendous sales and profit growth because renewable energies have been on the rise, not only in Germany, but also in the entire European Union.

Five years ago, the company's great economic success led the management to list all of Sun-Shine's 10 million shares on the German stock exchange, which also brought about the requirement to apply IFRS in the company's consolidated financial statements. The shares were first listed at a face value of 5 euros each.²

Subsequent to their IPO, Sun-Shine decided to enter the U.S. market, a huge, albeit underdeveloped, market. The management team always believed that the U.S. would eventually become one of the top markets for solar installments—an opportunity the company could not forgo. California has taken a leading role in promoting renewable energy based on expecting additional tax revenue, but also due to its plentiful supply of the necessary natural resource.

Not wanting to start from scratch in the U.S., and as a result of the comfortable cash situation following its IPO, Sun-Shine acquired California-Sun, a local company, following a thorough due diligence process. The purchase price of California-Sun was determined on the assumption that the state of California would support the solar industry for at least the next 20 years. The San Francisco-based company was founded five years ago and focuses mainly on the U.S. market, where it has grown continuously over the years. To finance its strong growth, California-Sun has taken out a loan at a local bank. Due to the inherent risks of a startup company, California-Sun and the bank negotiated covenants in the credit agreements. An essential clause states that California-Sun, who follows U.S. GAAP, has to present an equity ratio (measured as equity divided by total assets) of at least 60.0 percent, which is very typical for the solar industry. If the rate falls below 60.0 percent, the bank has the right to immediately terminate the credit. The interest rate on the loan was based mainly on the rating estimation of California-Sun. At the time of the credit lending, California-Sun had a BBB+ rating, which has not changed since the credit was granted. Since the lending, the economic situation of California-Sun has steadily improved. This success story of a young company is also evidenced by the high equity ratio, which California-Sun shows in its most recent pro forma balance sheet for 20X1 (Table 1).

California-Sun operates two distinct business units that generate cash flows independently from each other. "Modules" produces and sells solar modules, making up about 85 percent of the

² There has not been a capital increase since the initial public offering (IPO).

TABLE 1
Pro Forma Balance Sheet 20X1 of California-Sun

Pro forma balance sheet 20X1 - California-Sun	
US-\$ in millions	
Cash and cash equivalents	3.8
Trade receivables	22.0
Inventory	12.0
Other assets	9.0
Current assets	46.8
Tangible assets	68.6
Land	13.0
Buildings	34.8
Production facilities	20.8
Intangible assets	40.0
License	40.0
Non-current assets	108.6
Total assets	155.4
Trade payables	12.5
Other payables	6.0
Current liabilities	18.5
Bank loans	20.0
Long-term liabilities	20.0
Equity	116.9
Total equity and liabilities	155.4

Note

Assume that the amounts do not differ between US GAAP and IFRS financial statements.

The figures do not consider any possible impairment charge.

company's total sales. California's intense solar power of 2,200 kilowatt-hours per square meter is double the amount generated in Central Europe and requires the company to add additional protection to the modules to slow down the decline in efficacy. The company's solar modules are resistant to this intense environment but, as a downside, are too expensive to be sold in other countries. Due to this technical specificity, Sun-Shine did not expect to realize any synergies from their acquisition of California-Sun.

The company's other business unit, "Glass," accounts for the remaining 15 percent of sales and produces safety glass, which is needed as the top layer of a solar module. This wafer-thin glass pane protects the module against severe weather, especially hail. A few weeks ago, California-Sun signed an exclusive contract with a Chinese manufacturer. The modules to be sold under the contract will be installed in the Gobi Desert, a superb location for photovoltaic installations. However, due to the climatic conditions in the Gobi Desert, fluctuating temperatures are common throughout the year such that California-Sun needs to adapt the safety glass specifically for this location. Selling the glass to another company is not possible. California-Sun sells all of its safety glass to this Chinese customer and is currently considering increasing the production capacity for the business unit "Glass."

Part I: Assessing the Situation

Immediately upon receiving the news of the subsidy cut, Thomas talks to Sebastian. Thomas is particularly worried about the effect of the government's decision on California-Sun's financial position and the group accounts of Sun-Shine. Just as Daniela told him, he explains to his boss that California-Sun will most likely see a strong decline in sales such that they need to assess the company's assets for impairment.

Stressing the effect of the cut on the company's performance, Thomas continues, "Our investors won't like this news because we may need to recognize a huge impairment loss. So you can expect that the market will punish us for a decision that someone else has taken." Reacting more calmly than Thomas expected, Sebastian assesses the situation in a more sober way: "Listen, Thomas, we do have a problem with that. We will need to assess carefully what the cut means—for our operations. Currently, I am not all too worried about our share price. Besides, analysts and shareholders generally do not consider impairment losses all that much because they are a noncash charge. They're more interested in the overall trend of the entire company and I think the development in one of our business units will not affect our share price and us too much. So, you worry about the accounting consequences and I will think about how to make up for the lost revenue."

The two of them agree that they need to clarify the issue before coming to premature conclusions. To do so, Sebastian asks Thomas to discuss the impact of the subsidy cut with the company's U.S. subsidiary. Along with Daniela, Thomas invites Peter Smith, head of accounting at California-Sun, and Sandra Miller, accountant at California-Sun, to join him in a conference call.

After organizational matters are resolved, Peter starts by stating the obvious: the subsidy cut is a major problem for the two companies. However, a forecast of how severe the decline in revenue will be is rather difficult. "Nonetheless," Peter concludes, "we need to assess the economic impact of the subsidy cut and examine our assets for impairment. Still, there is a good side to it: the subsidy cut does not affect the production of the safety glass, which is a completely independent unit."

Taking over from Peter, Sandra explains that her department is still working on closing the annual accounts and that she will be on vacation afterward. Worried that she will have to postpone her well-deserved vacation, Sandra proposes, "How about we just carry out the impairment test next quarter, i.e., on March 31? By then we will certainly have better estimates of the effects of the cuts—in particular the projected sales level." The four of them agree that they need to solve these issues before making any further steps regarding recognizing—or deferring—an impairment.

Following their conference call, Thomas explains to Sebastian what has been discussed. The CEO, who is in the midst of a meeting with California-Sun's CEO on how to deal with the matter, barks at Thomas, "Look, I told you, do whatever you think is needed. I don't know all that much about these accounting issues. So, why don't you fly over there first thing in the morning and discuss the matter with the people directly? Take Daniela with you and come back by the end of the

week with a solution to all of this.” Taken aback by Sebastian’s reaction, Thomas realizes that the issue may be more serious than his boss initially indicated.

The next morning, prior to their leaving, Thomas receives a call from Sebastian with some final instructions: “I know I told you to do whatever you think is right. But I have been thinking the issue through again and the situation seems to be worse than expected. In addition to what is going on at our subsidiary, I am also worried about the earnings of Sun-Shine. You know that analysts always expect us to meet or beat their earnings targets by consistently increasing our earnings. So, it may be good to avoid revealing additional bad news to the market. Investors are nervous enough for right now. I know it will be tough, but, if you can, it’d be great if you’re able to come back with good news. We could, for example, calm down investors by demonstrating that we had a careful look at our financial situation, ran an impairment test, and came up with the result that the government’s decision does not affect our business significantly. There must be some discretion around these issues that you can use, right? But, you know, if it is inevitable, do recognize an impairment loss as high as possible. In that case, we avoid the risk of future impairment by recognizing a one-time charge and look better next year.” Having received these additional instructions, Thomas and Daniela board their plane to San Francisco wondering where this issue would take them.

REQUIREMENTS: PART I

1. Consider the situation described in the case. Do the accountants need to run an impairment test? Under which accounting framework does that potential test fall?
2. Thomas and Sebastian have contrary views regarding the consequences of an impairment:
 - a. Thomas argues that an impairment loss will affect the share price of the company, while Sebastian thinks that impairments are noncash charges and thus not relevant for shareholders and the share price. Which statement do you agree with? Please explain your rationale.
 - b. In his final instructions, Sebastian suggests that Thomas should think carefully about recognizing an impairment loss. To what extent do you think impairment standards allow such flexibility? In your answer, consider the following issues and take into account the findings of the empirical research literature on the determinants and consequences of (goodwill) impairment charges:
 - What could be reasons why managers want to avoid impairment charges?
 - Do the financial benchmarks of analysts have an influence on the impairment decision?
 - What role do auditors play with regard to the review of professional judgment applied by management? What seems to be more appropriate to audit carefully: the process by which management arrives at its estimates, or the assertions behind these estimates?
 - What does your answer imply for the quality of financial reporting?
 - c. Please also comment on the looming impairment charge from a debt-holder perspective, taking into account the debt covenant imposed by the bank on California-Sun (Table 1).
3. Explain how a company conducts an (asset) impairment test under IFRS and U.S. GAAP and compare the procedures. Specifically comment on the following:
 - a. Scope and frequency of impairment tests.
 - b. Reasons/indicators (triggering events) for conducting an impairment test.
 - c. Methodology.

- d. Hierarchy of impairment testing.
- e. Reversals of impairment.

Part II: Asset Impairment Test

In San Francisco, Thomas and Daniela make their way to the offices of California-Sun to meet Peter and Sandra, who in the meantime have consulted the relevant accounting requirements. They tell their guests that, generally speaking, an asset impairment test is made up of the following basic components that the team needs to examine in more detail: first, they need to identify the assets that are to be tested based on the corresponding cash flows and carrying amounts. Subsequently, they are to assess whether these assets generate cash flows on a stand-alone basis or whether other assets are involved.

Assessing the Test Level

Based on their initial assessment, the team gets to work and examines which assets are to be tested for impairment. California-Sun acquired a license from the Federal Solar Commission to operate in the solar industry and produce solar modules. The Commission is an independent U.S. government body, overseeing all companies that wish to install solar products in the U.S. By contrast, there is no U.S. regulation for companies selling their products to foreign customers. When California-Sun acquired the production license two years ago, it paid \$44.0 million for a term of 22 years.

Sandra suggests that this license might in fact be impaired. The company made several assumptions in the bidding process, especially in terms of sales volume and revenue, which may no longer be valid. She points out that the license is not able to generate sales on its own, but merely allows the company to operate and produce solar modules. Thus, other assets would need to be included in the assessment. Remembering the striking words of Sebastian that, if possible, an impairment charge should be avoided, Thomas claims excitedly, "Let's test the license on the level of California-Sun. In that case, we include the 'Glass' unit, which is performing well and generates much revenue. That unit may offset the decline in performance and sales of 'Modules' and we might be able to avoid an impairment charge." Sandra, who has differing views, says, "That's right, Thomas. However, I am not sure whether we're able to do that. We have two segments that operate largely independently from each other and we need to run the test on the lowest level possible." Since the team cannot agree on one approach, they postpone the discussion of this issue and continue with the determination of the cash flows.

Future Cash Flows

The team finds it difficult to estimate the impact of the subsidy cut on the company's sales. They decide to talk to people who may know better than the accounting team. Answering their request, California-Sun's marketing department states, "Yes, the subsidy cut hits us very hard. Obviously, we did not have time to come up with a sophisticated estimate. But we think that our 20X2 sales will fall by up to 50 percent. For future years, we expect that the market will recover, only slowly, and that 20X3 will see a growth of 0.5 percent. The subsequent year, i.e., 20X4, will not be much better. We expect about 1.0 percent that year. Hopefully, the year after that will be a different story. In 20X5, we expect sales to grow again by 3.2 percent. By then, innovation will have reduced operating costs of the modules and enhanced economic efficiency, which will offset the subsidy cut and, eventually, lead to higher demand."

Agreeing that these estimates will help the team cover the revenue side of the story, they turn to an estimation of the costs. Peter argues that a reduction in sales will require the company to reduce

their fixed costs. Sun-Shine's management has already been pondering cuts in the workforce as a result of the looming overcapacity in the business unit "Modules." Due to labor laws and potential severance payments, it is not possible to precisely quantify the effects of an adjusted staff structure. Management has not yet agreed on the staff reduction, but any third party would use this cost-cutting measure in the current situation. Peter describes the dilemma: "Our company really needs to lay off some employees and I know we will do so. However, it has yet to be decided how many employees will be affected and that will also determine whether we need to observe a notice period. While, generally speaking, employment is considered to be 'at will' in California, a layoff of 50 or more employees would count as a mass layoff and require written notice 60 days prior to the layoff. Such a situation would, of course, defer any cost savings by two months. If we lay off fewer people, the savings may be lower, but felt more directly. In addition, how much we will save will depend very much on any severance packages that our company will offer and, thus, on employees' salaries, length of service, and other terms. In the end, we may not be able to save that much in the short run. Alternatively, the management may also argue that our employees are vital for the development of our products and try to work primarily with salary and wage cuts so as to not lose the knowledge accumulated by people. Just to get a reasonable number for this, I have managed to talk to human resources and they believe anything between \$0 and \$4 million could be a realistic estimate of the annual cost savings, likely in the upper part of that range."

Based on these assessments, Peter prepares a business plan for "Modules" for the four years from 20X2 to 20X5, as shown in Table 2. Since personnel savings are somewhat uncertain for the moment, he has not yet included them in his analysis. Other enhancements or restructurings are not included in the business plan. Peter explains that according to U.S. GAAP future enhancements and restructurings could be included in the cash flows, while there are two different concepts under IFRS, which would treat these amounts differently. He also notes that both the license (\$2 million per year) and the company's buildings (\$1 million per year) are depreciated on a straight-line basis.

From 20X5 onwards, California-Sun's management thinks the industry will be in better shape and suggests a sustainable growth rate of 4.0 percent. Management argues that this rate was estimated prior to the subsidy cut and will be reasonable in subsequent years, since the decline was only temporary. As a reference point, the team notes that the expected rate of inflation is 1.0 percent, while the economy has grown by approximately 2.0 percent in the last ten years. Sandra suggests comparing the management assumption to data from analysts covering the solar industry. She produces five analyst reports, all of which paint a gloomy picture, rejecting a return to the previous growth rates experienced in the U.S. In addition, the analysts point out that companies could not simply rely on technological advancement to assume they will do better in the future.

Being surprised by these assessments, Thomas says, "I do not think their assumptions are applicable to our situation because the analysts are not familiar with our operations. Our management has worked in the solar industry for years. If they believe a sustainable growth rate of 4.0 percent is acceptable, the same is true for me."

Determining Cost of Capital

Daniela points out that for calculating present values, they also need to obtain an appropriate discount rate. Determining the different components of cost of capital poses another challenge to the team. Sandra has already contacted California-Sun's finance department and an external party—Dow Capital—to collect all the information necessary for determining the cost of capital. Tim Robbins, assistant to the Vice President Finance of California-Sun, indicates, "Both debt holders and shareholders are affected by an impairment charge so you want to use the weighted average cost of capital (WACC). And when calculating the discount rate you should consider that, at least in the long

TABLE 2
Projected Financial Results of Business Unit “Modules”

Projected financial results - Modules					
US-\$ in millions	20X1F	20X2F	20X3F	20X4F	20X5F
Sales	160.0	80.0	80.4	81.2	83.8
growth		-50.0%	0.5%	1.0%	3.2%
Cost of goods sold	125.0	65.0	65.1	65.8	68.0
Gross Profit	35.0	15.0	15.3	15.4	15.8
margin	21.9%	18.8%	19.0%	19.0%	18.9%
Selling Expenses	11.0	7.0	7.1	7.1	7.1
Other Expenses	6.0	5.0	5.0	4.8	4.9
Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA)	18.0	3.0	3.2	3.5	3.8
margin	11.3%	3.8%	4.0%	4.3%	4.5%
Depreciation (buildings)	1.0	1.0	1.0	1.0	1.0
Amortization (license)	2.0	2.0	2.0	2.0	2.0
Earnings before Interest and Taxes (EBIT)	15.0	0.0	0.2	0.5	0.8
margin	9.4%	0.0%	0.2%	0.6%	1.0%

Note

F = Forecast

run, California-Sun will use a capital structure that corresponds to the one of Sun-Shine Group.” Checking up on these issues, Daniela points out that Sun-Shine’s stock price of \$10 has been depressed as a result of the financial crisis, and that the group’s financial liabilities amount to \$25 million.

Due to California-Sun’s credit standing, the current risk premium for the bank loan is 2.20 percent. For determining the cost of capital, Tim considers the following data relevant:

- Yield of 20-year U.S. government bonds: 2.80 percent.
- Expected return on the U.S. market (long-run, historical rate): 7.80 percent.
- Marginal tax rate: 30 percent.

Tim continues, “This is all I can give you for the moment. I know that you also need to determine the license’s sensitivity to non-diversifiable risk, i.e., our beta. However, we are not publicly traded so this will be a bit challenging. Also, to the best of my knowledge, there is not a publicly traded company that is all that similar to California-Sun. Maybe you should ask your German friends about this issue. Or—wait—why don’t you access Dow Capital and ask for the beta coefficient of Sun-Shine? I mean they’re our parent company so they have a similar risk profile. And they are publicly traded!”

Proceeding as suggested, the team obtains two beta coefficients from Dow Capital. From a statistical point of view both betas are acceptable, but are based on different time periods. The team, being surprised to receive two values, is not quite sure which coefficient to use. On the one hand,

they obtain a beta of 1.1, which is determined on the basis of five years. The time period suggests that the beta reflects well the risk of the company's operations. On the other hand, they get a two-year coefficient of 1.6, which may be more timely and, thus, more relevant for their purposes. Wondering what additional information they get from using a longer time period, Daniela points out that the latter coefficient may be distorted by the adverse economic environment. As the team remains in doubt which beta coefficient to use, Thomas suggests, "No one knows which beta coefficient is the correct one. In college, I learned that the market has a beta coefficient of 1.0. Using this beta, we probably can't go wrong."

Deriving the Carrying Amount

The team agrees that they also need to determine a carrying amount for the test. This value is made up of the book value of the asset to be tested and the book value of any contributory assets. In preparing for their meeting, Sandra already put much effort into drawing up this year's, as well as forecasts of subsequent years', balance sheets for "Modules," as shown in Table 3. She notes that she prepared the information under the assumption that in future years capital expenditures would correspond to depreciation of property, plant, and equipment.

She adds, "Our production facilities are not included in the balance sheet of "Modules" because—and I am not entirely certain about this—they may be corporate assets and thus require special treatment. The facilities have a carrying amount of \$20.8 million and are designed to produce all of our products in one facility. That is, either solar modules or safety glass can be produced, or both products at the same time."

She is also uncertain whether they need to attribute the goodwill of \$20.0 million to the license. Thomas responds impatiently, "We will definitely not include goodwill for this test. Testing goodwill is another story!" Realizing that his reaction was too harsh, Thomas apologizes and explains that everyone has had a long and stressful week. He points out that they have talked about all of the important issues for right now and suggests calling it a day. Although their work is not quite finished, Thomas and Daniela have gathered enough information and are now ready to return to Germany. The next morning, they fly back home with a large amount of data on the company and its business units, which they consider to be very useful in testing the company's assets for impairment.

REQUIREMENTS: PART II

1. At which level (stand-alone or group of assets) does the license need to be assessed for impairment? Explain.
2. For calculating the appropriate carrying amount, consider the following issues:
 - a. What do you make of Thomas' statement that goodwill will under no circumstances be allocated to the carrying amount?
 - b. Is it appropriate to allocate the production facilities to the carrying amount?
 - c. What is the carrying amount to be used in the asset impairment test?
3. When conducting the impairment test, consider the following:³
 - a. What is the forecast period for the future cash flows?

³ For your calculations, assume the following: (1) Cash flow components include the operating result (EBIT), adjusted tax on EBIT, depreciation and amortization, capital expenditures, and change in net working capital; (2) Net working capital is based on current assets and current liabilities; (3) Free cash flows are assumed to flow continuously over the year (midyear-assumption, i.e., cash flows in 20X2 are discounted over six months, cash flows for 20X3 over 18 months, etc.); and (4) Costs of disposal are 1 percent of fair value.

TABLE 3
Projected Balance Sheets of Business Unit “Modules”

Projected balance sheets - Modules					
US-\$ in millions	20X1F	20X2F	20X3F	20X4F	20X5F
Cash and cash equivalents	3.2	1.6	1.6	1.6	1.7
Trade receivables	18.0	9.0	9.0	9.1	9.4
Inventory	10.0	5.0	5.0	5.1	5.2
Other assets	6.0	3.0	3.0	3.0	3.1
Current assets	37.2	18.6	18.6	18.8	19.4
Tangible assets	40.0	40.0	40.0	40.0	40.0
Land	10.0	10.0	10.0	10.0	10.0
Buildings	30.0	30.0	30.0	30.0	30.0
Intangible assets	40.0	38.0	36.0	34.0	32.0
License	40.0	38.0	36.0	34.0	32.0
Non-current assets	80.0	78.0	76.0	74.0	72.0
Total assets	117.2	96.6	94.6	92.8	91.4
Trade payables	10.0	10.0	10.0	10.0	10.0
Other payables	5.0	5.0	5.0	5.0	5.0
Current liabilities	15.0	15.0	15.0	15.0	15.0
Bank loans	20.0	20.0	20.0	20.0	20.0
Long-term liabilities	20.0	20.0	20.0	20.0	20.0
Equity	82.2	61.6	59.6	57.8	56.4
Total equity and liabilities	117.2	96.6	94.6	92.8	91.4

Note

F = Forecast

- b. Do you think the management assumption regarding the growth rate is appropriate?
 - c. Determine the WACC using the Capital Asset Pricing Model (CAPM). What do you recommend regarding the beta coefficient? When determining beta, consider the effect of the time period (i.e., sample size) and the economic environment. Discuss the impact of your choice on the impairment test.
 - d. To which value do you compare the carrying amount as calculated in question 2 above?
4. Is the license impaired? If you find that the license is impaired, please record the impairment charge using an appropriate adjusting entry.⁴

⁴ Assume that all revised carrying amounts exceed fair values.