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Alternative Energy Derivative and Hedge Accounting

Clint Carlin
ccarlin@deloitte.com

Jason Weaver
jaweaver@deloitte.com

Deloitte & Touche LLP

Agenda

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Potential New Hedging Standard	Clint Carlin
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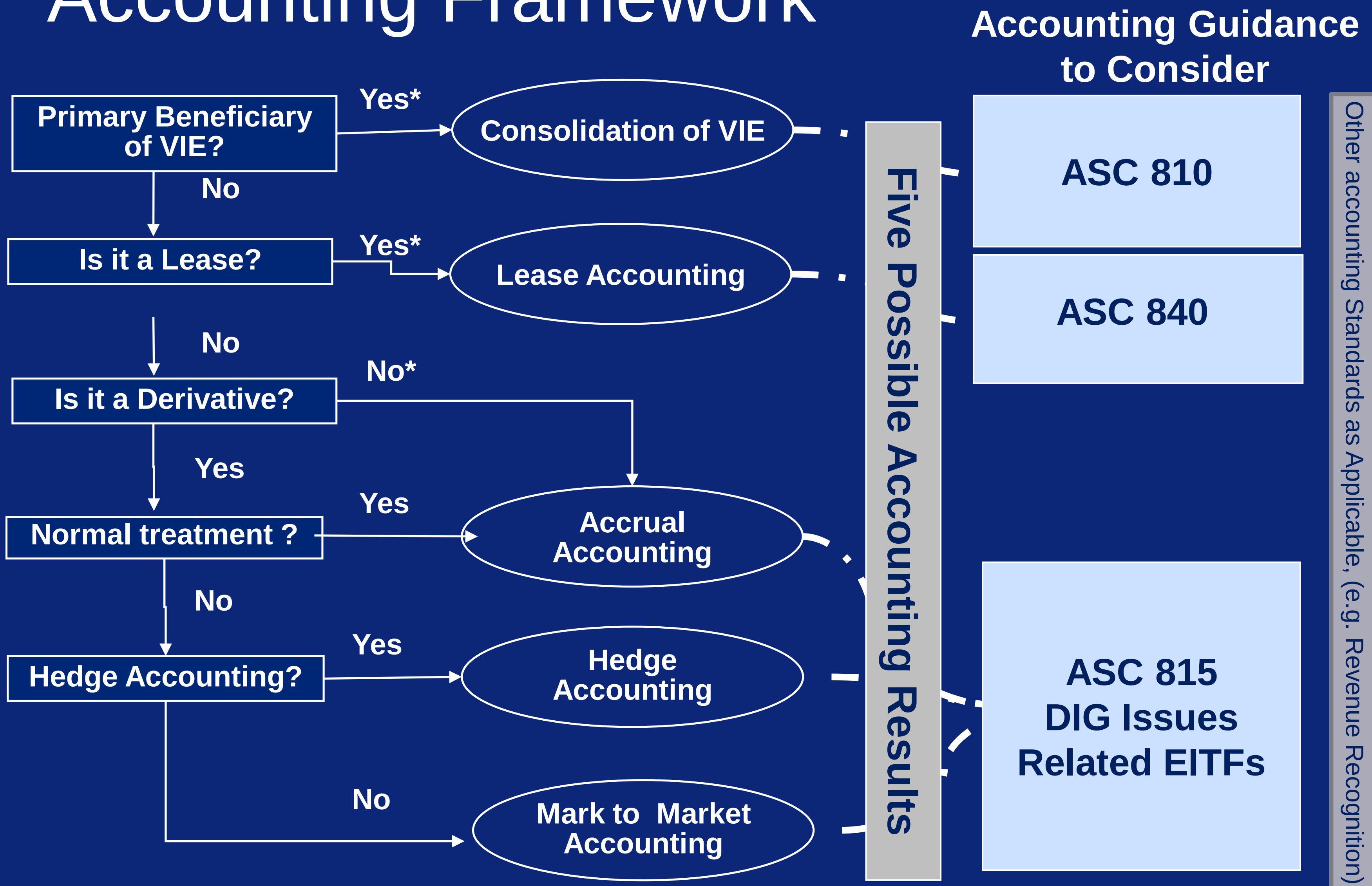
Derivative Accounting & NPNS

Accounting Framework



* Requires embedded derivative review
** Consolidation Accounting may be applicable

NPNS Requirements

- ASC 815 provides for a few scope exceptions which allow contracts that might otherwise qualify as derivatives to receive “non-derivative” accounting treatment. Normal purchases and normal sales is one of those exceptions.
- ASC 815 defines a normal contract as follows:
  - Contract provides for the purchase or sale of something other than a financial instrument or a derivative
  - Must be probable that the contract will result in physical delivery
  - Quantities in the contract are consistent with normal operational needs and are expected to be used or sold in the “normal course of business”
  - The underlying price in the contract must be clearly and closely related to the physical product being delivered in the contract

Documentation Requirements

- Documentation must exist for all contracts elected "normal" and must be contemporaneous
  - Basis for concluding that the contract is probable of physical delivery
  - Support that quantities are consistent with normal operational needs
  - Special documentation requirements for power contracts designated as "capacity"
  - Documentation is allowed for a pool of contracts, but the pool may be "tainted" by one of the contracts net settling in some way

NPNS Challenges *(cont.)*

- Must be in the normal course of business
  - Company must define its “normal course of business”
  - As companies have “re-trenched” into core business activity, confusion has increased relative to what “normal” is or is not in context of transacting activity
  - Labeling activity as non-trading has certainly been a trend in the past but ASC 815 requires additional analysis

- Net settlement will not occur, or is rare
  - Evaluation of unplanned netting for ASC 815-10-15-41
  - Net settlement should be evaluated by performing backtesting (even for capacity contracts)
  - **Recently issued ASU 2015-13 provides additional guidance when generation is not in the same location as load**

NPNS Challenges *(cont.)*

- Ongoing Monitoring must be done
  - A common mistake of companies is to disregard the requirement of monitoring normal on an on-going basis. companies should have a mechanism in place to identify when changes in contracts or activities around the contracts have or will take place
  - A few noteworthy activities relative to on-going assessment are:
    - Change in business economics
    - Re-negotiation of contract terms
    - Contract settlement/assignment
    - Selling of a business or assets of a business

Hedge Accounting

Benefits of Hedge Accounting

- To reduce earning volatility
- To accurately represent the entity’s risk management activities in the financial statements

Requirements of Hedge Accounting

- To qualify for hedge accounting, a company must:
  - Put in place well documented, specific and contemporaneous documentation at inception
  - Prove effectiveness of the hedging relationship
  - Prove and monitor the probability of the forecasted event (in the case of a cash flow hedge)
- IMPORTANT
  - No documentation means no hedge accounting
  - Uncertainty & non-occurrence of forecasted transaction: discontinue hedge accounting

Challenges of Hedge Accounting

- Hedge criteria are strict – *"it's not a right, it's a privilege"*
- Hedging mitigates **Economic Risk** but can create **Accounting/Audit Risk**:
  - Strict FASB Hedge documentation requirements
  - SEC focus area as this is a very complex topic
  - Calculating the ineffective /effective hedge balance (Proxy & Cross commodity hedges)
  - Reporting hedge balances / disclosure requirements
  - Monitoring compliance with hedge strategy
  - Additional time & cost burden (People, Process, policy, System)

Hedge Types Summary

Cash Flow Hedge

Hedging Instrument

Mark to Market
Asset/Liability and **OCI**

Hedged Item (Floating Price Physical Contract)

No Accounting

Fair Value Hedge

Hedging Instrument

Mark to Market
Asset/Liability through **P&L**

Hedged Item (Fixed Price Physical Contract)

Change in Fair Value
Asset/Liability through **P&L**

Cash Flow Hedge Accounting Model

Measurement of derivative

Change in Fair Value* → Equity†

↓

After forecast occurs and impacts Earnings → Earnings

*Hedge ineffectiveness always reported in current earnings.

†Defer in equity until hedged transaction affects earnings; if transaction no longer probable, immediately recognize in earnings.

Cash Flow Hedges

Accounting hedges commonly used:

- Generally used to hedge the exposure of price movements in future cash flows (i.e., lock the price of forecasted transactions);
- Designation must be well documented, specific and contemporaneous (no retroactive designation);
- A cash flow hedge converts a “floating” cash flow stream (i.e., forecasted future transaction) into a “fixed” stream.

Hedge Requirements - Documentation

- Hedge Documentation Requirements
  - Specific Documentation Requirements
    - Contemporaneous designation and documentation of the hedging relationship must occur before hedge accounting can be applied, including documentation of the following:
      - A description of the hedging relationship and the risk management objective and strategy for undertaking the hedge
      - Identification of the hedging instrument
      - Identification of the hedged item
      - A description of the nature of the risk being hedged
      - A description of how the effectiveness will be assessed
      - A description of how the effectiveness will be measured

Requirements – Hedged Item

- Hedged Item (Forecast)
  - Hedged Item examples
    - The forecasted transaction (hedged item) could be identified as:
      - The first 15,000 units purchased/sold during a specified 3-month period
      - The first 5,000 units purchased/sold in each of the 3 specified months

    - The forecasted transaction (hedged item) cannot be identified as:
      - The last 15,000 units purchased/sold during a specified 3-month period
        - These could not be identified until after the period has ended

Hedge Requirements - Probability

Is Probability a Problem?

- At each reporting date, evaluate whether the hedged transaction is still probable
  - If still probable, continue hedge accounting
- If it is probable that it will **NOT** occur
  - Recognize amounts in OCI into earnings immediately
  - Recognize changes in the fair value of the derivative through earnings prospectively
- If probability is uncertain
  - Freeze OCI and discontinue hedge accounting prospectively

See also ASC 815-30-40-4 thru 6

Hedge Requirements – Probability *(cont.)*

What if a forecasted transaction does not occur when expected to?

- If the expected date of occurrence is missed, but the transaction is still probable of occurring within a 2-month period of the original date,
  - OCI does not need to reclassified if the forecasted transaction's occurrence will be within 60 days
  - Must be de-designated per DIG G-18 (ASC 815-30-55-129-133)
  - In rare circumstances (i.e., never), time periods may be extended beyond the additional 60 days.
- For forecasted transactions whose timing involves some uncertainty and have been documented within a range (DIG G-16 (ASC 815-20-55-102)), if originally estimated timing changes, ineffectiveness "catch up" adjustment required for change in expected future cash flows (due to new timing)

Hedge Requirements - Effectiveness

- FASB declined to quantify “highly effective”
  - Intended to be similar to “high correlation” under SFAS 80
  - Standard dictates that the movement in value (or the risk being hedged) in the hedging instrument and the movement in value (or the risk being hedged) of the hedged item must correlate between 80% to 125%. (In statistical regression analysis terms, R2 must be 0.8 or greater and the slope must be between 80% and 125%, as well as consideration for F and T statistics.)

Hedge Requirements - Effectiveness *(cont.)*

- Assessing Effectiveness
  - The assessment of hedge effectiveness is required to be performed on both a prospective and retrospective basis at both:
    - The inception of the hedge, and
    - At the end of each reporting period (at least quarterly)

Hedge Requirements - Effectiveness *(cont.)*

- Prospective Assessment
  - Assessment of hedge effectiveness necessary to qualify for hedge accounting in the upcoming period
  - Forward look at the hedging relationship
- Retrospective Assessment
  - Assessment of hedge effectiveness required to qualify for hedge accounting in the period just ended
  - Backward look at the hedging relationship
- Methods Used for Assessment
  - Regression Analysis
  - Ratio Dollar Offset (period-to-period or cumulative)
  - Other reasonable statistical methodology)

Cash Flow Hedging - Ineffectiveness

- Sources of Ineffectiveness
  - The following are all potential sources of ineffectiveness:
    - Basis (location and grade)
    - Cross-commodity/cross-currency
    - Delta Hedging
    - Timing (difference between period in item and period in instrument)
    - Spot/Forward differences (if using spot method in a FV hedge)
    - Time Value
      - Option exists to exclude time value from effectiveness assessment and measurement (would go to income statement)
      - If terms don’t match, it may be necessary to exclude time value

Measurement of Ineffectiveness

- Measuring Ineffectiveness
  - Recording Ineffectiveness
    - Amounts included in OCI are limited to the lesser of:
      - The cumulative change in fair value of the derivative from inception OR
      - The portion of the cumulative change on the derivative necessary to offset the expected future cash flows of the hedged item from inception
  - Dollar-offset method required

Measurement of Ineffectiveness *(cont.)*

- Measuring Ineffectiveness
  - Examples
    - Derivative increases $100, expected future cash flows decrease by $90
      - How much is recorded to OCI?
      - How much is recorded in earnings as ineffectiveness?
    - Derivative increases $90, expected future cash flows decrease by $100
      - How much is recorded to OCI?
      - How much is recorded in earnings as ineffectiveness?

What Other Companies Are Doing?

Risk Management (Industry Practice)

We see following risk management strategies in place:

Hedge Type	Risk	Product	Hedge Instrument	Risk Management objective
Cash Flow Hedges	Commodity price fluctuations	Renewable Energy (Wind / Solar Power)	Physical and financial contracts such as forwards, futures, swaps and options.	Fix sale price to hedge the risk of power price fluctuations
Cash Flow Hedges	Variable interest rate exposure	Variable-rate debt	Interest rate swap	Fix the floating interest rate component
Fair Value Hedges	Change in fair value of debt	Fix rate long term debt	Interest rate swap	Convert fix rate debt to floating (pay variable & receive fix)
Cash Flow Hedges	Exchange rate fluctuations	Foreign currency transactions	Forward contract, swaps and foreign currency options	Hedge the foreign exchange fluctuations

In addition to derivative instruments that are designated and qualify for hedge accounting, Companies also use certain derivatives contracts as economic hedges of foreign currency, variable interest rate and commodity exposure. The risk management objectives for these derivatives are similar to the objectives stated above.

Hedging Project

Highlights of FASB Tentative Conclusions

Overall Hedging Model

- No changes to the current guidance on highly effective threshold or voluntarily designations
- Quantitative assessment of hedge effectiveness would be required at hedge inception (unless criteria for shortcut or critical terms match method are met).
- Subsequent assessments would only be required if facts and circumstances change.
- At hedge inception, an entity would need to document the method that will be used to assess hedge effectiveness; however, initial quantitative assessment does not have to be completed until the end of the reporting period in which the hedge was designated
- For highly effective hedging relationships, all changes to fair value of the hedging derivative would be recorded in other comprehensive income until the hedged item affects earnings in cash flow hedges, and the income statement for fair value hedges
- For nonfinancial items, the model also would permit an entity to designate a contractually specified component or ingredient that is linked to a contractually stated rate or index as a hedged item

Highlights of FASB Tentative Conclusions

- Financial Hedging Relationships
  - Contractually specified index rate in a variable-rate hedged item can be the designated interest rate risk
  - SIFMA Municipal Swap index would be a permitted benchmark interest rate

- Shortcut Method
  - No changes to the existing shortcut method
  - An entity would allowed to document at hedge inception the long-haul method it would use to measure hedge ineffectiveness if the shortcut method could not be applied.
  - If an entity later determines that the shortcut method is inappropriate, the entity can continue the hedging relationship using this long-haul method
    - Entity would need to assess whether the difference between applying the shortcut method and the long-haul method is material and if restatement is required

Case Studies

Cash Flow Hedge – Case Study

- Generating Co. wants to hedge the risk of decreasing power prices associated with the future sale of power produced from its wind farm assets (October 2017)

- The applicable generation asset is located in the ERCOT West market and it is expected to generate 2000 megawatts per month to supply its customers

Cash Flow Hedge – Case Study *(cont.)*

- How could Generating Co. hedge this price risk?
  - Fixed for float swap for October of 2017
- What information would be expected to be included in the hedge documentation?
  - Hedge relationship → Hedge of anticipated sale of power
  - Hedge instrument → Forward to sale power at fix price at ERCOT West
  - Hedged item → Forecasted sale of power in ERCOT West market
  - Amount hedged → 2000 Megawatts
  - Period hedged → October 2017
  - Assessment type → Regression

Cash Flow Hedge – Effectiveness

Is it a highly effective relationship?

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9998
R Square	0.9997
Adjusted R Square	0.9711
Standard Error	0.0871
Observations	*36*

Correlation

ANOVA

F-stat

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	806.1028717	806.1028717	106374.7602	5.12388E-61
Residual	35	0.265228335	0.007577952		
Total	36	806.3681			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	0	#N/A	#N/A	#N/A	#N/A
X Variable 1	0.9765	0.002993874	326.1514375	1.49929E-62	0.970378409

Slope **T-stat**

Cash Flow Hedge – Case Study *(cont.)*

Assume the following price information:

Date	ERCOT West (Forward)	EW (Node)
Period 0	$60	$60
Period 1	$65	$65
Period 2	$70	$68

- What are the accounting entries for periods 0, 1, and 2?
- Assume periodic journal entries

Cash Flow Hedge – Case Study *(cont.)*

- Period 0
  - No entries necessary
- Period 1
  - Dr. Derivative Asset 10,000
  - Cr. OCI 10,000
- Period 2
  - Dr. Derivative Asset 10,000
  - Cr. OCI 6,000
  - Cr. P&L 4,000

Questions?

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