A MODEL APPROACH FOR PARTNERSHIP FINANCING STRUCTURES

Create strategic competitive advantages in renewable energy and other financings

Executive Summary

Special Allocation Partnerships have become an important financing structure in the energy industry over the last decade, as they provide compelling benefits for monetizing tax incentives. However, the complexity of the partnership tax code and the inadequacies of spreadsheet technology have impeded the adoption of Special Allocation Partnerships.

Partnership tax regulations stand apart as one of the most complex domains of the US tax code. Requirements such as Substantial Economic Effect, Capital Accounts, Liquidation, Deficit Restoration Obligations, Minimum Gain, and Contribution of Assets represent key challenges for the modeling and tracking of partnerships. The consequences of noncompliance with the tax code can be dire—destroying the economics of a deal.

Recycled spreadsheets support a majority of partnership deals today creating inefficiencies and a high potential for undetected errors. A number of partnership model attributes expose these spreadsheet limitations, including:

1) Minor changes in partnership deal structures can cause ripple effects through multiple dimensions of a model magnifying spreadsheet code changes and the chance of introducing errors;
2) Balancing each partner's desired economic objectives requires simultaneously optimizing key partnership terms, an analysis that outstrips spreadsheet goal seeking functionality; and
3) Negotiating deal points requires that each party understand how a model calculates the impact of underlying assumptions on performance indicators, a perspective generally obscured by spreadsheets.

To make the most of the opportunities provided by Special Allocation Partnerships, deal teams need to move away from spreadsheets and explore state of the art methods for enhancing the clarity, accuracy, and efficiency of their financial modeling practices. Key technology requirements include: managing model complexity, enabling multi-dimensional modeling, enabling powerful advanced analyses, and enabling efficient utilization of model results. The Advantage Partnership Solution satisfies these requirements and provides a number of distinctive benefits to deal teams:

- Compete more effectively by:
  - Responding quickly to market opportunities
  - Understanding the impact of structures and terms on all parties
  - Harmonizing the objectives of parties with finely tuned terms
  - Competing through innovative structures.
- Increase efficiency by:
  - Reducing time spent modeling the impact of complex accounting and tax regulations
  - Reducing time spent negotiating deal points
  - Reducing time spent on bad deals.
- Manage regulatory compliance more effectively by automatically incorporating the impact of accounting and tax regulations in model results.

The Advantage Partnership Solution enables deal teams to quickly examine innovative partnership structures without losing control of the modeling process. Teams that embrace this technology can compete more effectively, increase efficiency, and manage compliance, converting an area of complexity into strategic competitive advantage.

Role of Special Allocation Partnerships

Special Allocation Partnerships have become an important financing structure in the energy industry over the last decade. A key application area is the development and operation of energy projects that qualify for production tax credits (PTCs), as they are often structured as partnerships between institutional investors and companies providing the operational know-how.

To maximize the value of the available tax subsidies, the majority of income and loss generated during the tax credit period are typically allocated to the institutional investors, who can claim the tax incentives associated with the project. This includes depreciation deductions associated with the accelerated write-off of alternative energy assets and tax credits arising from a project.

In one commonly used structure, energy developers recover investments quicker by receiving cash generated from the project during the PTC period. After the PTC period, the interests of the partners usually flip, allocating more taxable income and residual cash flow to the developer.

Barriers to utilization

The complexity of the operating asset and diversity of investor objectives characterize partnership structures for renewable energy. Despite the compelling financial benefits associated with Special Allocation Partnerships, two barriers have prevented Special Allocation Partnerships from being adopted more widely:

1) The complexity of the partnership tax code requires specialty tax advice;
2) Spreadsheets are inadequate tools for partnership modeling and many popular optimization programs lack the flexibility and transparency.

This paper discusses each of these factors and proposes a new modeling paradigm that enables financial analysts to overcome the complexities of partnership modeling.

Complexities of Partnership Tax Code

Partnership taxation stands apart as one of the most complex domains of the US tax code, and implementing the regulations represents one of the key challenges associated with modeling and tracking partnerships. To prevent abuse of the tax system, the partnership tax code places requirements on Special Allocation Partnerships such as: Substantial Economic Effect, Capital Accounts, Liquidation, Deficit Restoration Obligations, Minimum Gain, and Contribution of Assets. The consequences of noncompliance with the tax code can be dire—destroying the economics of a deal.

Substantial economic effect

Section 704(b) of the tax code requires that all special allocations of partnership tax items have "substantial economic effect." There are three primary requirements for allocations to have economic effect:

1. Maintaining capital accounts and reflecting allocations in capital accounts;
2. Liquidating partnerships in accordance with capital accounts;
3. Requiring partners with deficits in their capital accounts to restore the deficit.

Even if an allocation passes the economic effect test, it must be considered substantial. Partners with qualifying allocations have a reasonable possibility of receiving a different amount of cash independent of tax consequences. The tax profiles of partners must be understood in order to evaluate substantiality.

Capital accounts, liquidation and deficit restoration obligations

The capital account represents each partner's share of equity in the partnership. Over the period of the deal, capital accounts track the cumulative to-date difference between the income allocated to the partner and the cash. In the event of liquidation, the capital accounts are used to determine the amount of distributable proceeds each partner receives after liquidating assets

and settling liabilities.

The requirement for a partner to cover a deficit capital account is referred to as a Deficit Restoration Obligation (DRO). A partner with a deficit capital account at liquidation must pay in cash the amount in deficit to other partners. These payments are not a tax deductible expense. If the partners prefer, Qualified Income Offsets can be used in lieu of DROs. This provision requires the allocation of future income or gain to eliminate the deficit balance.

Minimum gain

A partner's share of Minimum Gain must be tracked if a partnership structure includes non-recourse debt. Minimum Gain equals the excess of non-recourse liabilities over the book basis of the property securing the liability. This excess represents the minimum gain to be recognized by the partnership without regard to the success or failure of its business.

Minimum gain at the partnership level drives tax code specific allocations to the partners that define their shares of minimum gain. These allocations are referred to as "non-recourse deductions" and "minimum gain charge-backs". The specific rules are complicated by any relationship partners might have to the non-recourse lender(s). Also, cross collateralization of assets and liabilities can impact these calculations.

Contribution of assets

Partners may contribute assets rather than cash to a partnership. The tax code stipulates that the partnership recognizes these assets at fair market value (FMV) for capital account and depreciation purposes.

A tax versus book discrepancy is created when the FMV of contributed assets differs from their tax basis at the time of contribution. Although a contributing partner receives capital account credit at FMV, this difference between FMV and tax basis triggers no tax gain (or loss) at the time of the transaction.

IRC Sec. 704(c) describes how to unwind this deferral of gain (or loss) over time. 704(c) offers three methods: "Traditional", "Remedial Allocations" and "Curative Allocations". These methods are subject to

an anti-abuse rule.

Other

The sections of the partnership tax code described herein represent some of the more significant sections but are by no means complete. These descriptions highlight the impact the regulations can have on the economics of a deal and the complexity of a model.

GAAP Complexities

The proper accounting of partners' earnings has been unsettled for many years, although efforts are currently underway to clarify the rules. A number of companies have adopted the "hypothetical liquidation at book value" method. Each accounting period, this method relies on determining what would occur if the partnership actually liquidated (e.g., selling its assets at GAAP value, paying off its liabilities to the extent of the proceeds, and allocating any resulting gain or loss in accordance with the provisions of its governing document). These calculations employ all other aspects of the modeled partnership, including tax consequences.

Modeling Challenges

The majority of partnership structures today are modeled in spreadsheets. When modeling partnerships in spreadsheets, analysts have the option of either "reinventing the wheel" by creating the partnership components from the ground up or recycling an existing partnership spreadsheet and hooking it up to the new operations model.

While building partnership components from the ground up requires a large time investment, the common practice of reusing spreadsheets tends to introduce errors when making even seemingly straightforward changes such as date adjustments.

In either case, analysts face several significant modeling challenges due to the inherent structural limitations of spreadsheet technology[1] and the attributes

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[1] See Advantage for Analysts Whitepaper "A Case for a new Financial Modeling Metaphor—

of partnership models described below.

Multiple dimensions

Partnership models consist of many interconnected elements such as the partnership structure, partnership tax code consequences, tax calculations, etc., many of which are connected to the underlying operations model.

Better Financial Analysis by Design" (2006)

The fact that each economic transaction has consequences in several dimensions (depending on the type of transaction), such as its effects on different deal participants, perspectives on cash and income recognition, and outcomes, creates additional modeling challenges. Figure 1 depicts this dimensionality, which also applies to other types of financial models in general.
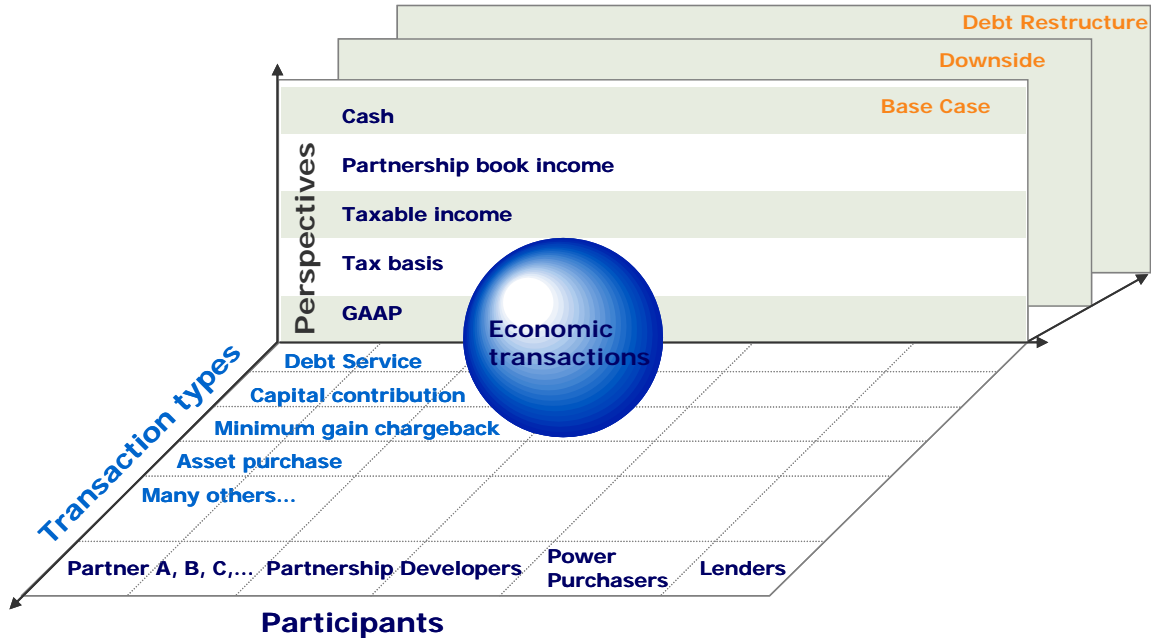

Figure 1: Multiple dimensions of economic transactions

When structuring the components of a partnership, analysts need to account for parallel impacts on distributions, allocations, tax basis and accounting. Also, this impact can vary from participant to participant and impacts on one participant can affect another (e.g. capital account deficits). Unfortunately, spreadsheets are not easily designed to analyze these multiple dimensions, let alone analyze additional outcomes.

Advanced analytics

Financial modeling best practices typically incorporate the analysis of multiple business scenarios and time horizons. In partnership models, for example, analysts might want to consider a buy-out option, a debt restructuring case, and some alternate scenarios for the business model. However, since both tax and economic

consequences need to be modeled in multiple dimensions for each scenario, spreadsheets quickly reach their limitations.

As the terms of the partnership are tuned and negotiated among the partners, analysts need to quickly respond to new offers and ideas by testing alternative structures within the model. This step can involve adjusting timelines, adding debt, flips, special allocations, etc. With most spreadsheet partnership models, this is a cumbersome and error prone process that limits attempts to identify new structures.

A modeling challenge arises from the need to simultaneously optimize key partnership terms such as equity contributions, partner interests, pre- and post-flip shares, or the time horizon, to satisfy each partner's desired economic objectives. Without

significant augmentation, spreadsheets lack the sophistication to fine tune the economics of a deal, as simultaneously optimizing these multiple variables outstrips spreadsheet goal seeking functionality.

Multiple interests

To support the negotiation of partnership terms, each party must understand the underlying assumptions, the performance indicators, and the impact of events. Unfortunately, spreadsheet models typically impede a collective understanding.

Compliance

Before closing a deal, attorneys need to assess the deal's compliance with the partnership tax code. To facilitate this assessment, analysts need to produce reports that detail the tax and economic consequences of a partnership structure.

Once negotiations have been completed for a partnership, its detailed structure and terms need to be translated from the model into an unambiguous partnership agreement. The difficulty of interpreting spreadsheets impedes this effort.

Tracking

Once the partnership is executed, its dollar flows need to be tracked, complex reports have to be prepared for investors, and GAAP accounting has to be performed. When after-tax flips exist, tracking the

timing of the flip can be one of the most critical aspects of a tracking model. However, shortcuts that may have been taken for capturing terms and structures within spreadsheets during negotiations often generate calculation errors in tracking models. The need to accurately define triggering events creates another challenge in tracking models.

A New Modeling Paradigm

Modeling process

The steps depicted in Figure 2 offers deal teams a manageable approach to modeling partnership deals. Prior to structuring the partnership components, they independently model the business opportunity or review externally submitted spreadsheets of operations models. They then add the business components that define the partnership structure (contributions, allocations, shares, debt, etc.), which can be structured in varying degrees of complexity. The next step consists of modeling the tax consequences of the partnership, implementing the complex rules described in the previous section. Once all model components are in place, analysts iteratively manipulate the partnership terms with the goal of meeting each investor's economic objectives during negotiations, and ensuring compliance with the tax code. Once the deal has closed, the partnership needs to be tracked over the term of the deal

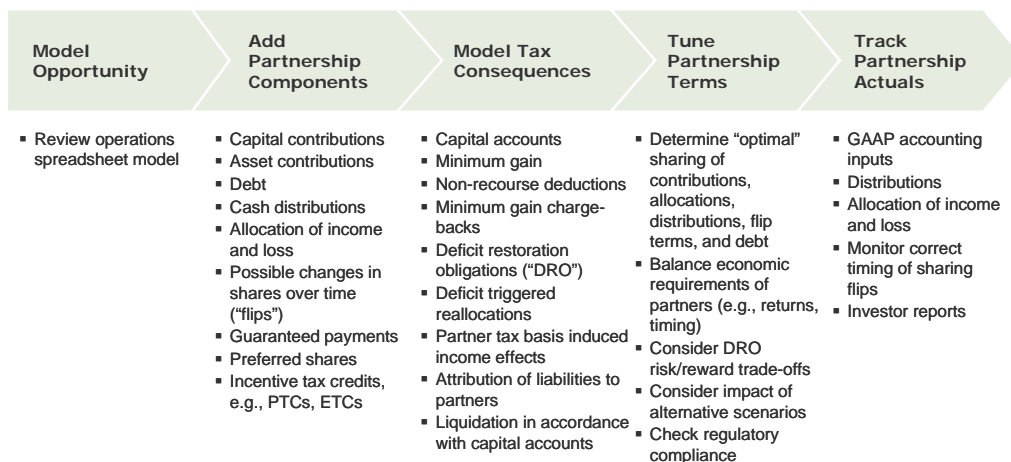| Model Opportunity	Add Partnership Components	Model Tax Consequences	Tune Partnership Terms	Track Partnership Actuals
▪ Review operations spreadsheet model	▪ Capital contributions ▪ Asset contributions ▪ Debt ▪ Cash distributions ▪ Allocation of income and loss ▪ Possible changes in shares over time ("flips") ▪ Guaranteed payments ▪ Preferred shares ▪ Incentive tax credits, e.g., PTCs, ETCs	▪ Capital accounts ▪ Minimum gain ▪ Non-recourse deductions ▪ Minimum gain charge-backs ▪ Deficit restoration obligations ("DRO") ▪ Deficit triggered reallocations ▪ Partner tax basis induced income effects ▪ Attribution of liabilities to partners ▪ Liquidation in accordance with capital accounts	▪ Determine "optimal" sharing of contributions, allocations, distributions, flip terms, and debt ▪ Balance economic requirements of partners (e.g., returns, timing) ▪ Consider DRO risk/reward trade-offs ▪ Consider impact of alternative scenarios ▪ Check regulatory compliance	▪ GAAP accounting inputs ▪ Distributions ▪ Allocation of income and loss ▪ Monitor correct timing of sharing flips ▪ Investor reports

Figure 2: Partnership Modeling Process

Requirements for a state of the art modeling tool

The modeling challenges outlined above highlight the fact that partnership modeling requires a combination of skills that bridges the knowledge of financial analysts and tax attorneys. As an additional obstacle, the consequences of getting models wrong may be severe. If the IRS determines that a structure doesn't comply with the substantial economic effect requirement, it may disallow allocations and destroy the economics of a deal.

To overcome these challenges and encourage a more widespread adoption of Special Allocation Partnerships, analysts require a state of the art modeling tool that helps illuminate the consequences of different partnership structures rapidly, flexibly, and with minimal risk of errors. Such a tool should be easy to maintain, reduce the need for analysts to understand the most technical details of the tax code, and meet the following modeling requirements:

1) Manage model complexity
- Modular components that enable flexible structuring of partnerships
- Reusable module libraries that codify, share, and maintain organizational knowledge
- Automated analysis from each deal party's perspective

2) Enable multi-dimensional modeling
- Building blocks that relate finance with regulations
- A structural taxonomy and clearly defined payment classifications
- Automated tracking of payment classifications
- Automated tracking of tax effects

3) Enable powerful advanced analyses
- Functionality to perform efficient scenario analysis
- Advanced multivariate optimization

4) Enable efficient utilization of model
- Transparent modeling language
- Automated report generation

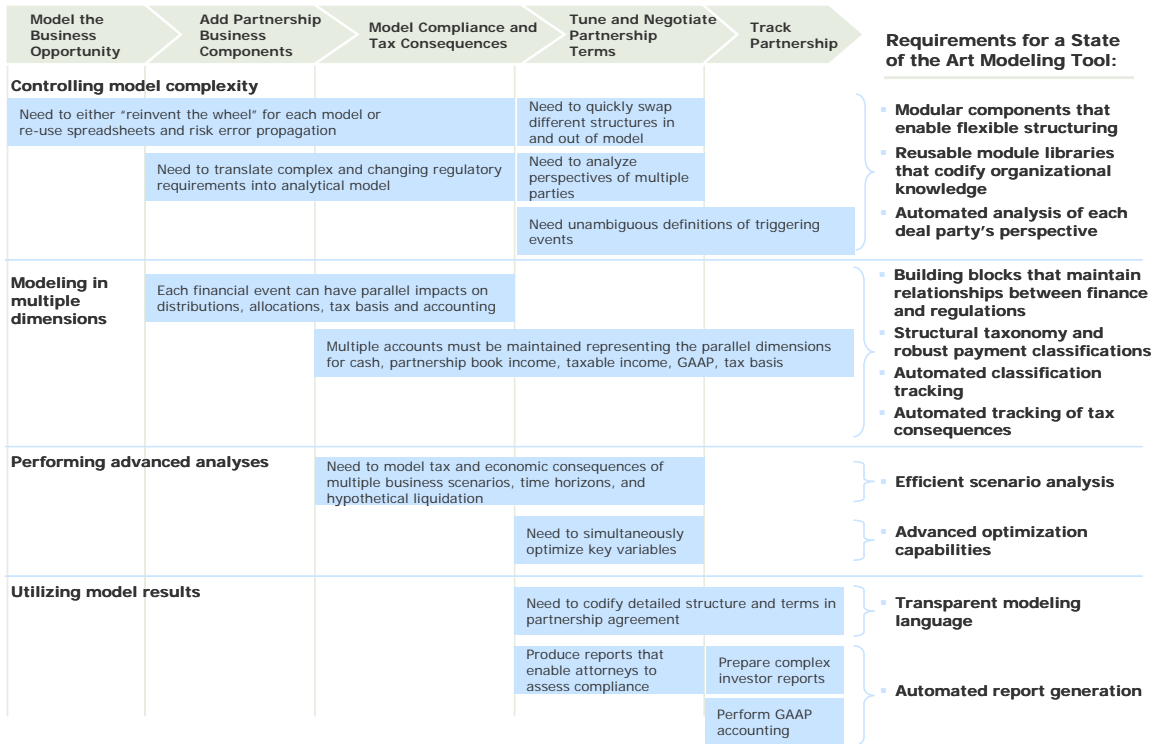Figure 3 summarizes the key challenges associated with each modeling step and the resulting requirements:

Model the Business Opportunity	Add Partnership Business Components	Model Compliance and Tax Consequences	Tune and Negotiate Partnership Terms	Track Partnership	Requirements for a State of the Art Modeling Tool:
Controlling model complexity					
Need to either "reinvent the wheel" for each model or re-use spreadsheets and risk error propagation		Need to quickly swap different structures in and out of model			Modular components that enable flexible structuring
	Need to translate complex and changing regulatory requirements into analytical model	Need to analyze perspectives of multiple parties			Reusable module libraries that codify organizational knowledge
		Need unambiguous definitions of triggering events			Automated analysis of each deal party's perspective
Modeling in multiple dimensions	Each financial event can have parallel impacts on distributions, allocations, tax basis and accounting				Building blocks that maintain relationships between finance and regulations
		Multiple accounts must be maintained representing the parallel dimensions for cash, partnership book income, taxable income, GAAP, tax basis			Structural taxonomy and robust payment classifications
					Automated classification tracking
					Automated tracking of tax consequences
Performing advanced analyses	Need to model tax and economic consequences of multiple business scenarios, time horizons, and hypothetical liquidation				Efficient scenario analysis
		Need to simultaneously optimize key variables			Advanced optimization capabilities
Utilizing model results		Need to codify detailed structure and terms in partnership agreement			Transparent modeling language
		Produce reports that enable attorneys to assess compliance	Prepare complex investor reports		Automated report generation
			Perform GAAP accounting		

Figure 3: Pain points and requirements in the partnership modeling process

The Advantage Partnership Solution Set offers key features that meet the requirements outlined above and provide analysts with capabilities that allow them to harness the complexity of partnerships. Furthermore, this Solution Set helps deal teams turn complexity into a source of competitive advantage.

Modularity

A library of reusable modules within the Advantage Partnership Solution captures the common elements of partnerships. These modules simplify modeling of Special Allocation Partnerships for any business, including business operations modeled in external spreadsheets. Graphically assembling these modular components through a drag-and-drop interface creates models of the financing opportunity and partnership structure. Modular input templates capture partnership deal parameters.

This modularity enables analysts to easily integrate operating models and tax credits into partnership structures and to flexibly analyze a wide range of deal structures. Module libraries facilitate the replication of tax code, capture and share organizational knowledge, and enable quick adoption of changes in the tax code. The modularity of the solution also lets analysts add or remove special allocations with ease.

Transparency

The Advantage modeling environment relies on a structural taxonomy, clearly defined payment classifications, and explicit relationships between deal participants. This modeling environment enables high level descriptions of relationships and cash flows that help manage low-level numerical details. Advantage classifies each financial instrument, such as debt service, capital contribution, minimum gain chargeback, asset purchase, etc. This robust taxonomy maintains the relationship between the economic components of the partnership and regulations.

In addition to the transparent model structure, Advantage formulas use name-based references that are easy to understand. These combined features help control the complexity of models and greatly reduce the risk of errors.

Calculation templates

Advantage's robust structural taxonomy enables a host of complex calculations to be performed automatically "behind the scenes". For example, the effects of partnership transactions are tracked automatically in multiple accounts that represent the parallel dimensions of cash, partnership book income, taxable income, tax basis, and GAAP.

This automated tracking also enables unambiguous definitions of triggering events. Advantage precisely defines date streams that propagate throughout a model to help manage timeline events. This timeline management simplifies the treatment of events, such as early payment of debt. In addition, timeframe adjustments occur without the risk of introducing errors.

These features increase analyst efficiency and enable deal structure innovation.

Partner perspectives

Advantage's structural taxonomy also tracks the economic and tax consequences of a partnership structure for each participant in a deal. This enables different deal participants and financers to reach a collective understanding of underlying assumptions and their implications on the results for all parties across all events. This feature greatly improves the negotiation process and facilitates the balancing of different investors' objectives.

Advanced analytics

Advantage's sophisticated and user friendly optimization capabilities enable multiple simultaneous searches for optimal terms within a given partnership structure. These analytics allow investors to balance various objectives based on equity contributions, partner interests, flipping shares, time horizon, etc, enabling both partners to reap greater value. Advantage's optimization feature enables analysts to greatly speed up the process of fine tuning partnership terms.

Advantage also provides an efficient scenario analysis feature, which

automatically calculates and tracks multiple outcomes in addition to the base case. Analysts can easily include alternative scenarios, such as a downside case for a wind farm, a buy-out option, or a debt restructuring case.

Reports

The Advantage Partnership Solution Set automatically generates a full set of reports for each deal party detailing the tax and economic consequences of a partnership structure. These reports help attorneys quickly assess compliance with the tax code (e.g. IRC 704 "substantial economic effect"), provide GAAP accounting, and facilitate tracking of the partnership over the term of the deal.

Figure 4 summarizes the features and capabilities of the Advantage Special Allocation Partnership Solution.

Advantage Features	Capabilities
Modular solution set applicable to a variety of structures	
• Reusable module libraries • Modular components	• Flexibly analyze wide range of deal structures • Easily integrate operating models and tax credits • Codifies organizational knowledge • Enables quick adaptation to changes in tax code
Transparent model structure	
• Structural taxonomy and robust payment classifications • Building blocks that maintain relationships between finance and tax code • Transparent modeling language	• Helps analysts bridge the gap between finance and tax code • Controls model complexity • Reduces risk of model errors
Built-in calculations	
• Automated classification tracking • Automated tracking of tax consequences • Date changes propagate through entire model	• Speeds up modeling time • Creates flexibility to changes in deal structure • Reduces ambiguity about triggering events
Automated analysis of each deal party's perspective	
• Economic and tax consequences for each party	• Improves negotiation process • Enables balancing of different investors' objectives
User friendly advanced analytics	
• Multiple simultaneous searches for optimal variables • Efficient scenario analysis	• Optimizes allocations and timing of flips for a given structure • Speeds up fine tuning of terms • Enables both partners to reap greater value
Automated report generation	
• Full set of reports for each deal party • Tax reports • GAAP accounting	• Facilitates assessment of compliance by attorneys • Speeds up integration of model with agreement terms • Facilitates tracking of partnership actuals over deal term

Figure 4: Features and Capabilities of the Advantage Special Allocation Partnership Solution

Case study

As mentioned in the introductory example, partnership structures for renewable energy are characterized both by the complexity of the assets' operating plans and by the diversity of different investors' objectives. Babcock & Brown, a global investment bank and Advantage client, had identified Special Allocation Partnerships for wind energy projects as a key opportunity area. To attract the first institutional investors to wind energy after a decade long hiatus required the development of a marketable and sophisticated special allocations partnership. This structure needed to balance investor economic requirements while adding value to the project developers. All the dimensions described in this paper (cash flow, tax, GAAP, etc.) needed to be balanced attractively.

Modeling Special Allocation Partnership structures in Advantage provided the flexibility and powerful analytic capabilities that were needed. With the help of members of the Advantage team, the bank not only became a leading manager of renewable energy assets but was also awarded the 2003 American Wind Energy Association Financier of the Year for its role in the Sweetwater transaction and two other wind projects. The bank stated that their newfound ability to maintain model transparency in the most complex deal

structures and communicate the impact of different financing options to each investor were key enablers.

In addition, analysts utilized Advantage's search functionality extensively in fine tuning complex partnership structures. Advantage's ability to simultaneously solve for multiple variables at the push of a button allowed them to achieve better economics for all parties in a timely manner. Finally, the new rapid response time enabled the company to capture more opportunities than their competitors. Overall, Babcock & Brown reported that Advantage enabled them to regain control of the analytical process and turn their partnership modeling capabilities into a source of competitive advantage.

Conclusion

Special Allocation Partnerships have become an important financing structure to monetize tax benefits in incentivized industries like renewable energy. However, the complexity of the partnership tax code and the inadequacies of spreadsheets have limited the adoption of these structures.

To make the most of the opportunities provided by this financing structure, organizations need to move away from spreadsheets and explore state of the art methods for enhancing the clarity, accuracy, and efficiency of their financial modeling practices. The Advantage Partnership Solution meets these requirements and provides analysts with a number of distinctive benefits:

- Analysts will be able to bridge the gap between finance and regulations.
- Companies will gain competitive advantage by:
  - Responding quickly to market opportunities
  - Competing through innovative structures
  - Aligning parties by harmonizing their objectives.
- Analysts will spend less time on bad deals.
- Deal teams will have increased confidence in model results.
- Deals will have fewer errors and misunderstandings due to a consistent

and complete set of information shared among all deal participants and/or prospects.
- Partners will reap greater value with finely tuned allocations.
- Deals will accelerate with more transparent partnership agreements.

To summarize, analysts will be able to illuminate the consequences of different partnership structures rapidly, flexibly, and with minimal risk of errors. Organizations that embrace this modeling platform can surpass traditional methods, harnessing complexity, improving communications with participants, increasing efficiency, and competing through innovation. This enables organizations to regain control of the analytical process and convert the complexity of Special Allocation Partnerships into a strategic competitive advantage.