

## Modelling in renewable energy projects as a tool for strategic decision making



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The most critical financial services in the energy due diligence services is financial advisory and specially financial modelling, as causing a decrease in financing costs and optimizing the finance structure. Financial modelling plays a part in both investment decisions and evaluation.

In project finance, financial model allows a project-specific calculation that demonstrates all cash flows and presents all the outstanding performance indicators. Financial models help financiers through indicating entire funding decisions, providing flexible functionality for funding, forecasting production amount, reviewing tax calculations, creating master scenario and optimizing the project. Another benefit of financial modelling is that it provides input to sensitivity analysis.

For renewable energy projects, focus of the financial modelling is unit cost of production. In this context, financial modelling ensures calculation of the unit cost with considering different conditions. Outcomes of this process help determining the lowest levelized cost of energy in certain conditions and constitute the base of a PPA.

Financial models can be divided into two depending on the stage of use and the details of the model. It is important to form operational models after the financing is secured and financial close models to be updated. In Project Finance transactions in Turkey, the usual structure is to use project finance financial close models as is for future operational phases that cause problems in both the financing and operations of the plant. With this respect of experience and a recent article by Matthew Bernath we would like to dig deeper into these models, and how to manage the transition. Two financial models can be stated as:

- Financial Close Model
- Operational Model

"The financial close model is a model that aims to raise capital, comprehend a deal and finally reach financial close. This model is useful for not only equity but also debt providers in terms of understanding project risks and sensitivities. This makes the model favourable for financial close and hedging process, in addition being a powerful negotiation tool. Construction and operations begin after the financial close. Financial covenants and ratios are considered to measure in order to interpret the project, because project starts to create revenues and incur expenses.

Operational model advantageous for events that happen at operational phase such as refinancing and sell-downs. In addition, operational model is useful for equity holders as refinancing or additional gearing are deliberated.

Both models are helpful in different phases of the projects. The most common problem in the renewable energy sector is to continue to use of the financial close model during the operational period without creating a separate operational model. To convert financial close model to an operational financial model, there are several points financiers should pay attention.

### Hard-Coding Inputs

Inputs which cannot be changed once Financial Close have to be reached are hard-coded. This may include sculpted debt repayments, hedged rates or sensitivities built into the model for running scenarios during the funding process. It should not be possible for future model users to change these cells or any other inputs that have been 'hard-coded' and agreed to during Financial Close.

### Make Changes Easy

Inputs that do require changes or to be updated during operation (wind data or power generated, sales etc.) can be changed very easily and the place in whi-

ch these can be changed can be easily found because tracking changes helps illustrating the situation. Anyone responsible for updating the operational financial model should understand exactly what and where they need to update assumptions with actual figures when updating the operational model.

### **Handover Process**

Have a proper handover process and training to ensure the model builder adequately explains how the model works and what will be changing now that the model is being converted to an operational financial model. In addition, it should be clear what key ratios and outputs equity and debt providers expect to see on an ongoing basis.

### **Covenants**

Ratios and covenants should be clearly displayed as the bank will be particularly interested in monitoring these.

### **Functionality**

Cash flow waterfall have to be still functional in the operational financial model - this will be key to ensure that ratios are correctly calculated, and the bank can assess cash flows.

### **Dashboards**

Build in an operational dashboard that will be useful for management reporting. This dashboard will also show when key events can or should occur.

### **Operational Financial Model Audit**

Audit the operational model to give management and the banks confidence in the model. While this might seem like overkill, auditing a model that will probably survive the length of the project - be it 17 - 25 years, is extremely worthwhile and an easy decision to make.

### **Making the Operational Financial Model 'Decision-Useful'**

Of course, the list above is not extensive. All complications of the certain transaction should be consi-

dered when transforming a financial close model to operational. Following the above list will be provided to move forward a model that can be used to monitor a project and is decision-useful.

Ultimately - every financial model should be decision-useful, i.e. it should be a tool used for decision making of both an operational and strategic nature. A Financial Close Model that has successfully been transitioned into an Operational Model will be both operationally useful for management report, and strategically important for key project decision making."

As a result the modelling differences and points to watch out is pointed above. As a practitioner advisory service firm in financial modelling it is critical for project owners and corporates to outsource modelling work to an independent advisory company. This independence from corporate structures and decision lines and day to day operations will prove a successful conversion to operation models from all set financial close models.

### **References**

1. Matthew Bernath, "What is a Financial Close Model vs. an Operational Financial Model?"; 2019
2. EIA Publication, Levelized Cost of New Generation Resources in the Annual Energy Outlook 2013
3. Ed Bodmer, Energy Financial Modelling, 2015