

PROJECT SUMMARY

The Energy Trust of Oregon (ETO) currently delivers capital for renewable energy projects in the form of “completion-based” incentives that are awarded to a project owner upon successful construction or installation of a renewable energy project/technology. This structure of deploying capital is effective as a buy down of the overall project cost but it does not address some of the other challenges that currently exist with financing a renewable energy project.

In October 2008, the world economy experienced what many refer to as the collapse (near standstill) of global credit markets. As ETO is aware, tax credits/incentives are a significant driver of renewable energy projects but are limited in their ability to finance projects. Due to the economic recession that has coincided with the tightening of credit markets, many potential renewable energy project investors are hesitant or unable to confidently predict their future taxable income and hence tax liability. Consistent tax liability is necessary to monetize/benefit from many of the Federal and State tax credits. Restrictive credit markets and limited access to equity investors (who have tax appetite) makes assembling a renewable energy project in Oregon very difficult at the present time. In the past, when credit was easily accessible and tax investors were relatively plentiful, overall project cost was a large barrier to pulling projects together. Recent years have brought increased proof of renewable technologies (particularly wind and solar PV) and a growing number of reliable industry contractors. Overall project cost is important for the initial development decision, but BETC financing issues, such as finding an equity partner and bridge financing, provide serious roadblocks in the near term.

REPORT CONTENTS

SECTION 1—Lending and Barriers: Blue Tree interviewed a number of lenders and renewable energy project participants to find out the perceived risks or barriers to early stage, bridge, construction, and permanent financing for small to medium size renewable energy projects. Through our discussions with these lenders and project participants we have been able to identify lending risks that if alleviated would open up the availability of financing to renewable energy projects across Oregon. In addition to providing recommendations, we have provided summaries for the most widely used public and private incentives options, including a new department at Oregon Department of Energy.

SECTION 2—Lender Concerns: A summary chart of the primary areas of concern for providing financing to renewable energy deals from the perspective of commercial lenders. Lenders who participated in this report were asked to comment on this section, adding additional areas of concern and/or validating the summary we provided them. In an effort to more clearly identify the main areas of concern, Blue Tree developed a matrix to simplify and identify the primary issues for providing financing to renewable energy deals, and

worked with all lenders interviewed to achieve consensus and to provide a useful tool for both ETO and lenders.

SECTION 3—Financial Analysis: A customized financial sensitivity analysis that supports and translates project findings.

SECTION 1—Lending and Barriers

With input from Energy Trust, Blue Tree compiled a list of lenders and project participants (see **Attachment A**). The purpose of including both project participants and lenders is to incorporate perspectives from the institutions that provide financing and the developers that require financing. Lenders underwrite renewable energy projects (RE) largely the same way they underwrite their commercial lending portfolio. However, RE projects are usually very different from traditional loans. By including RE project participants we are able to highlight these differences to illuminate the challenges for lenders.

There is an information barrier in getting lenders to offer details about their RE lending. They either did not want to provide confidential portfolio details, or they are wary of negative criticism due to their lack of RE and green lending. Whether or not lenders were willing to provide detailed information about their portfolio, all agreed that the topic is of importance and were willing to offer their thoughts about the challenges of RE lending and ways it could be improved. Project participants were very willing to discuss their difficulties developing a RE project and securing financing.

It cannot be overstated how cautious commercial banks are about extending credit for any deals after suffering huge losses and work-outs from the deteriorating real estate market, and economy in general. A large portion of bank underwriting was driven by the assumption that collateral values remain stable or increase over time. Typically, construction loans were structured as follows:

- 1) Collateral value is given a lot of weight. Lenders race to get the fee revenue from construction financing and then again to close out the long-term debt. Banks usually sell off the long-term debt to investors, gain liquidity, and do it all over again. Financing previously was being extended up to 80% (sometimes 90% towards the end).
- 2) Estimated and forecasted project cash flow were considered reliable and adequate sources of repayment for financing. Whether rents came from leasing space in a real estate deal or a Power Purchase Agreement in a solar deal, the world felt stable and there was little need for guarantees and excessive cash reserves.

- 3) Third party guarantees and signatures were required but very loosely scrutinized. Lenders were willing to rely on project cash flows and collateral in order to extend credit.
- 4) Cash equity to the tune of 20%-40% of the project was required from the project development team. Draw requests were compared with “on time and on budget” schedule. If anything got behind the Lender had provisions to require additional cash contributions to keep the deal moving forward.

In the time since the financial world turned upside down banks have been forced to seriously tighten underwriting criteria, thus approaching new deals with greater scrutiny and skepticism. Construction loans have been restructured as follows:

- 1) Collateral is assumed to have little to no value. Accordingly, Loan to Value requirements can be as conservative as 50%. “Cash is king” in a difficult economy and all other assets are being deeply discounted.
- 2) Banks consider much of the equipment and technology for RE projects inadequate collateral due to the fact it is new and unproven, with limited lifespan. A number of banks interviewed will not provide financing to projects using only the equipment as collateral.
- 3) Projected and forecasted cash flow is still required, and is given some merit for repayment, but not without personal or unrelated business guarantees and contracts for PPAs and BETC buyers.
- 4) Most lenders are currently underwriting and extending loans only to projects that have borrowers or guarantors that could absorb a total loss of the project.
- 5) Performance bonds are also being required by Lenders who do not feel confident in their understanding of a new technology like renewable energy projects or in the ability of a contractor to complete a renewable project on time and on budget when there is relatively little history of performance in the market place.
- 6) Increased equity contributions are being required, often in excess of 50% of project costs. This equity funds have to be spent before any debt enters a project. Lenders sometimes require cash reserves held in escrow as collateral, up to 100% of project costs, which is viewed with confusion by developers and borrowers who wonder what value the lender plays at all.

The purpose of this section is to explain how RE project challenges have become underwriting barriers and where the ETO might be able to provide some relief to lenders and encourage greater lending to RE projects. Project participants interviewed for this report discussed the following challenges when trying to complete a RE project, and the lenders interviewed discussed how these challenges become underwriting obstacles (see summary chart **Attachment B**). For a list of discussion topics used during interviews with lenders and project participants see **Attachment C**.

Timeline: All project participants interviewed agree that RE projects have long and complicated timelines. Projects must assume and negotiate many costs and uncertainties up front without proper permitting and sufficient financing in-place. For example, RE projects require negotiations with utilities about rates. Often utilities require payments up front to provide feasibility and interconnection analysis. Dependent on technology a professional feasibility study is usually completed. Applicable technology needs to be purchased, which may be difficult to order such as wind turbines, and require significant deposits up front, prior to receiving financing and permits. There are also a number of local and federal government incentives that can be utilized but are dependent on certain criteria being accomplished. In addition, many of these programs can change along with local and national political leadership. All of the lenders interviewed agreed that before approving a loan they want certainty about long-term cash flow, proper permits, interconnection agreements, etc. The timeline of RE projects can span years, and the order in which events happen are unfamiliar and concerning to institutions considering financing these deals.

Up-Front Costs: RE projects require up-front investment for feasibility studies, permitting, work with utilities, and deposits on equipment and technology. All of the project participants interviewed commented that it is very difficult to find financing for these early stage expenses yet the early stages are critical for projects to be successful. Projects without wealthy investors or cash flow from existing businesses often lack the funds to pay early costs and reach the construction phase.

Permits and Regulations: All of the project participants were critical about the number of permitting and siting requirements within federal and state law that apply to RE projects. Often, a project developer will have to deal with a number of different agencies including the Department of Energy, Fish and Wildlife, Bureau of Indian Affairs, not to mention local regulations and permit requirements. One project participant commented that in Oregon, it is difficult for community-based projects to succeed because the permits and regulations that apply to smaller projects are the same as those that apply to large-scale RE projects. Smaller scale projects do not have the financing necessary to sustain the time and expense needed to satisfy permit and siting requirements. However, all of the project participants and lenders agree that Oregon's standardized Power Purchase Agreement for RE projects below 10MW, is crucial to the success rate of smaller-scale projects, and helped improve the likelihood of RE projects receiving financing.

Multiple Parties and Stake Holders: RE projects involve a number of governmental and non-governmental organizations. Project participants all mentioned about the challenges dealing with the utilities, which have the ability to make a project succeed or fail based on the fees they charge and how willing they are to negotiate transmission and other technical issues. One project participant praised ETO for having a staff person designated to help mediate between

project developers and utilities (Diana Broad was the name he cited). RE projects also include investors, developers, government officials, land-owners, consultants, manufacturers, etc. Successful RE projects require vigilant project management and strategic negotiating to address the needs of the many different stakeholders.

Technology and Expertise: The successful installation and operation of RE project equipment is critical. Several project participants commented that it is critical to partner with a manufacturer or contractor that is very experienced and knowledgeable about installation, operation, local code requirements, etc. All of the lenders interviewed agree that banks are concerned about the reliability of some of the equipment and technology used for RE projects. Banks do not want to be the first to finance new RE equipment or technology. They want to know whether there is a current facility or institution using the RE equipment/technology with success. Simply providing banks with testing data is usually inadequate to prove reliability. For example, most of the wave technology, and newer models of turbines (such as the Urban Turbine by Oregon Wind) are examples of unproven and risky equipment/technology. Project participants noted the challenge of securing permanent loans because they are dependent on the equipment and technology performing, yet early stage financing needed for permits and to perform feasibility analysis, as well as to secure construction financing, are all counting on the permanent financing as a takeout source.

Timing and Uncertainty of Financing: All of the project participants interviewed commented on the challenge of securing early capital because much of the financing, tax credits, and incentives are available upon project completion, after a majority of development issues have been resolved. Project participants most frequently identified bridge financing as the most difficult type of financing to secure, even though a project has committed tax credits and/or has addressed a number of the issues outlined above. Many of the lenders commented that they are unwilling to commit significant time and resources to a short-term high-risk loan. Due to the upfront costs and uncertain timeline, lenders do not want to provide financing unless projects are well developed and looking for long-term financing.

Due Diligence: One lender identified their most critical underwriting criteria as execution risk. Even RE projects that involve sufficient capital, high net-worth individuals, and established businesses must be able to detail how that the project can be executed from start to finish. Project participants noted that it is crucial that they be able to demonstrate to lenders the expertise, or access to people who have the expertise, to successfully permit, construct, and operate the RE technology. Moreover, one lender noted the importance of borrowers being able to show they have access to the legal expertise to demonstrate a firm understanding of regulatory requirements, utility issues, guarantees, and contracts before banks will approve loans.

Key Lender Comments:

- *Good Press:* RE deals provide an innovative and appealing alternative for banks to deploy their funds. In addition, they provide opportunity for banks to receive positive press, something all the lenders interviewed agree is very important right now. However, none of the lenders interviewed are willing to compromise their portfolio risk level for good press.
- *Training and Education:* All the lenders interviewed were interested in renewable energy project finance trainings and the opportunity to network and discuss this topic with other lenders. One lender noted that project finance trainings are usually offered in New York City and can be very expensive.
- *Large vs. Small Banks:* Most of the lenders interviewed commented on the dichotomy between large national banks and local/regional lenders. In particular, interviewees commented that the larger national banks have people and departments who are trained and experienced to manage the underwriting complexities of RE deals. Local, regional, and smaller banks rarely have the experience, training, and resources to underwrite RE in a similar fashion. Larger banks are primarily financing RE projects in the \$100 million and 100-200MW range. In Oregon, many of these larger projects have been completed, leaving a lot of opportunity for smaller/regional banks to finance projects in the \$1-\$20 million and 2MW-10MW range. There are an increasing number of smaller scale projects that require financing, and project participants are relying on lenders that may have limited experience and training on how to mitigate RE project underwriting challenges.

SUMMARY & RECOMMENDATIONS

All lenders agree that underwriting RE projects is very challenging. Likewise, all project participants agree that trying to piece together all of the financing for a RE project is very challenging. While lenders are most reluctant to provide early stage and bridge financing, it is important to note that all financing stages must be considered when lenders underwrite a loan. For example, RE project developers must demonstrate the availability and commitment of permanent financing in order for a bank to consider early stage, bridge, or construction financing. This report highlights the need to focus on early stage and bridge financing in order to help more RE projects succeed. However, in order to increase early stage and bridge financing it is imperative to understand all stages of RE project financing. This is why all of our discussions with lenders and project participants included all stages of project financing, not just early stage and bridge financing.

Lending institutions large and small are increasingly interested, and are committing more and more financing for clean energy projects. It is critical to recognize the distinction between the large/national banks, and the smaller/regional banks. Larger banks have the resources, training, and experience lending to RE projects. Smaller banks are very interested in RE projects but have limited experience and institutional capacity to underwrite a substantial amount of RE projects, or clean energy projects in general. Smaller/regional banks do not lack desire to finance RE projects. All of our interviewees expressed strong support and interest to provide financing for RE projects. To successfully underwrite these projects thus far, lenders have either looked for projects with strong guarantors, or cobbled together subsidies, tax credits, and other incentives until the project conforms to a traditional and familiar underwriting standard. Refer to Section 2 for a chart that summarizes how lending institutions apply this standard to a typical RE project. **Attachment D** provides an example of a typical lending institutions' due diligence required to support the underwriting challenges included in the chart.

For the foreseeable future the increased FDIC regulations is going to continue the current trend of conservative underwriting. In order to get banks to take on more RE deals ETO should focus on helping banks remove as much risk as possible. It is not practical to expect that banks will all of a sudden start providing more bridge financing. Lenders are going back to the basics and tightening underwriting standards. It is critical to acknowledge this fact, yet try to identify ways to take advantage of the growing interest banks are giving to clean technology initiatives.

ETO Role:

Banks can provide their borrowers with financing but they are often unable to provide project expertise. All of the lenders we spoke with do not have sufficient resources or expertise to thoroughly and independently review projects from a technical feasibility standpoint. Furthermore, the lenders we interviewed do not have the ability to stay up-to-date on the various public/private incentives, tax credits, and Recovery Act funding opportunities. Typically, banks learn about these programs and incentives from the applications their borrowers submit.

- ETO could provide a valuable service to lenders by offering a third party review of borrowers' project feasibility from a technical perspective. This will help answer to critical technical questions; 1) Will the project work? And 2) Does the borrower have the capacity or access to people who will be able to make it work?
- ETO could provide an independent third party assessment/evaluation of lenders underwriting criteria in terms of evaluating the technical merits and feasibility, as well as the contractors/manufactures credibility.

- ETO could work closely with manufacturers of RE equipment to provide access for lenders who require greater collaboration between borrower and technology experts, or require more certainty with regards to project feasibility.
- ETO could help facilitate regular trainings for regional lenders that relate to RE projects and their financial structures, incentives, tax credits, subsidies, and the technical components.

There is mixed reaction from lenders about the possibility to participate with other lenders to provide financing to RE projects. Some banks do not like participation loans because it means they are at risk financially but often are unable to intervene and workout their loan if the project fails and/or there is a risk of losing their money. However, all of the lenders interviewed for this report expressed a strong desire to collaborate with other banks and to share experiences with the hope of learning from each other's mistakes, and for the possibility to partner together for future deals. The smaller/regional banks often only have one or two people assigned to clean energy lending, which makes it difficult for lenders to collaborate, learn, and stay up-to-date with the industry, within their own bank.

- ETO could provide opportunities for clean tech or "eco" lenders from local banks to meet together, or to join a network of like-minded institutions for the opportunity to learn from each other's experiences.
- In addition, ETO could work with an organization such as ODOE's new lending/incentive institution (see description below) to create opportunities for lenders that want to participate in RE deals but do not want to assume all of the early-stage risk. ETO could work with ODOE to work with RE developers in the early stages and create a clearinghouse of deals that, when combined with ETO and ODOE incentives, could be shopped around to a network of lenders who might want to participate in some or all of the project.
- ETO could be a clearinghouse for lending and RE projects by providing press release services and tracking lender activity and performance as it relates to RE and clean technology projects. Most of the lenders interviewed believe ETO's credibility and position as an independent resource and energy advocate will provide more notoriety and publicity for a bank than their own in-house efforts have been able to achieve. Tracking lender activity and performance will provide project participants with valuable up-to-date information regarding the types of loan products available to RE projects, and list of supportive and lenders.

The desire on the part of banks to lend to RE projects is on the rise. Lenders are working to find creative solutions to provide funding to RE projects without having to solely depend on the

strength of the borrower or guarantors' and/or their unrelated businesses. Banks are using innovative structures and existing reputable tax credits such as the New Market Tax Credit to complete community scale RE projects.

PUBLIC & PRIVATE INCENTIVES

Loan Guarantees and Incentives

Almost all RE projects include some form of government assistance. Most lenders are aware of the various programs available to borrowers, leaning either from the research of their clients, or from continuing education of the ever changing or industry related conferences. Some lenders employ individuals to keep up with the latest program incentives. All lenders expressed a desire for more specialized education and easier access to information regarding government assistance and other incentives. Brief descriptions of the most common and crucial sources of government assistance to RE projects are as follows:

USDA Support: Since the majority of RE projects are constructed in rural areas, they almost always include some sort of support from the regional USDA office. USDA offers a number of programs but the most applicable and common are:

- ***Business & Industry (B&I) Guaranteed Loan Program:*** Supports rural business lending by providing loan guarantees to commercial lenders financing rural businesses. Businesses can use the B&I for real estate, buildings, leasehold improvements, equipment, inventory, & *permanent* working capital.
 - Lenders prefer the B&I because it is lender-driven and it guarantees up to 90% of a loan. Commercial lenders request the B&I and, if approved, will make and service the loan.
 - Furthermore, lenders can sell the guaranteed portion of the loan to the secondary market, thus recovering their capital and allowing the bank to recommit funds to new projects much faster.
- ***Value Added Producer Grant:*** Provides 50%-matching grants to farmers, ranchers, foresters, and fishermen for either planning or working capital purposes to implement value-added ventures. There are five eligible value-added activities, the only RE related category is for On-Farm Renewable Energy.
 - Energy projects using **wind, solar, geothermal, or hydro** resources are eligible only if the energy will be used on-farm to power another value-added activity; simple energy generation from these resources is not eligible.
- ***Rural Energy For America Program (REAP):*** Offers grants and/or loan guarantees for the purchase and installation of energy efficiency improvements and renewable energy

projects. Assistance is limited to small businesses, farmers and ranchers. REAP grants and guarantees may be used individually or in combination. Together they may finance up to 75% of a project's cost. Grants can never finance more than 25% of the project or \$250,000. There is REAP support for both E2 and RE projects. REAP incentives for RE projects include:

- *Renewable Energy Generation Grants*—Provides matching grants to rural small businesses & agricultural producers for the purchase & installation of renewable energy generation systems in rural areas. Grants are limited to 25% of the project cost or \$500,000 – whichever is less.
- *Renewable Energy Guaranteed Loans*—Provides 60-85% loan guarantees to commercial lenders financing the purchase and installation of renewable energy generation systems in rural areas. Loans up to \$25 million can be guaranteed. Combination grant and guaranteed loan assistance cannot exceed 75% of total project cost.
- *REAP Grants for Feasibility Studies*—Provides grants to small businesses, farmers, and ranchers to help them pay for the cost of a detailed, professional, independent feasibility study on their prospective renewable energy projects. The study must be a final, comprehensive business-level study that gathers together and evaluates all of the preliminary data and studies and reaches a determination as to the viability and profitability of the proposed energy project. In addition, the grant may be used for a Resource Assessment study, i.e. a third party verification of the availability and suitability of the proposed renewable energy resource (wind, biomass, etc.). Assistance is limited to \$50,000 or 25% of the cost of the study - whichever is less.

Oregon Business Energy Tax Credit: For qualifying renewable resource projects, the tax credit is 50 percent of the eligible project costs, taken over five years. Renewable resource projects must replace at least 10 percent of the energy used. The energy can be used on site or sold. The tax credit can cover all costs (up to \$10 million) directly related to the project, including equipment cost, engineering and design fees, materials, supplies and installation costs. The business, its partners or its shareholders may use the credit.

- The Pass-through Option allows a project owner to transfer Business Energy Tax Credit project eligibility to a non-profit organization, public entity or any business with or without a tax liability in exchange for a lump-sum payment of 33.5 percent of eligible project costs for a five-year tax credit. The Oregon Department of Energy sets the Pass-through Option rates for the cash payment.
- Note: In January, 2010 the BETC pass through rates will increase. It will be determined using a formula set on an index that includes Treasury Notes and the Consumer Price Index for the West. As an example, November 13th, 2009 ODOE

cited a pass-through rate of 42.7% based on the index formula for that day. The rate was for a 5 year, 50%, Renewable Energy BETC project.

Department of Energy Loan Guarantees: The US DOE administers several programs that provide funding in the form of grants, loans, or loan guarantees for renewable energy and clean technology projects. Projects awarded government assistance thus far, employed technologies in the following areas:

1. Biomass
 2. Hydrogen
 3. Solar
 4. Wind and Hydropower
 5. Advanced Fossil Energy Coal
 6. Carbon Sequestration practices and technologies
 7. Electricity Delivery and Energy Reliability
 8. Alternative Fuel Vehicles
 9. Industry Energy Efficiency Projects
 10. Pollution Control Equipment
- **DOE Loan Guarantee Program:** Created in 2005, DOE issued its initial solicitation in 2006, and more in 2008. With funding from the Recovery Act, DOE can issue up to \$60 billion in loan guarantees, and are typically up to 80% of the loan amount.
 - DOE only recently announced recipients from the 2006 round. DOE is working on measures to expedite this program and conform to Recovery Act with its 2009 solicitations.
 - To this end, the Department announced the creation of its new Financial Institution Partnership Program (FIPP), a streamlined set of standards designed to expedite DOE's loan guarantee underwriting process and leverage private sector expertise and capital for the efficient and prudent funding of eligible projects. With this plan, qualified lenders will underwrite deals and apply directly to DOE for guarantees.
 - The loan guarantees are typically for very large projects and many of the lenders we spoke with have not been involved with RE projects that involved guarantees from DOE. Given the increase in funding from the Recovery Act, and the implementation of programs like FIPP, DOE loan guarantees could become more accessible to smaller scale projects and more attractive to lending institutions such as the ones interviewed for this report.
 - In 2009, as part of the Recovery Act, Congress created or expanded funding for a wide range of grant programs. The Recovery Act grant programs vary greatly in size—from

less than \$10 million to more than \$1 billion. They include funding for Renewable Energy, Industrial Energy Efficiency, Smart Grid, Electric Vehicles, and Energy Efficient Lighting.

New Market Tax Credits

Part of the federal Community Renewal Tax Relief Act of 2000, the New Markets Tax Credit Program encourages investments into privately managed investment institutions. In turn, these privately managed investment institutions, or Community Development Entities (CDEs), will make loans and capital investments in businesses in underserved areas. By making an investment in a CDE, an individual or corporate investor can receive a tax credit worth 39 percent (30 percent net present value) of the initial investment, distributed over 7 years, along with any anticipated return on their investment in the CDE.

The Community Development Financial Institutions Fund (CDFI Fund), a division of the U.S. Department of the Treasury, certifies CDEs on an ongoing basis, and allocates NMTC Allocations annually to select CDEs through a competitive application process. The CDFI Fund has the following requirements for qualification as a CDE:

- CDE is any duly organized entity treated as a domestic corporation or partnership for federal income tax purposes that:
 - Has a primary mission of serving, or providing investment capital for, low-income communities or low-income persons;
 - Maintains accountability to residents of low-income communities through their representation on any governing board of the entity or any advisory board to the entity; and
 - Has been certified as a CDE by the CDFI Fund of the US Department of Treasury.
- There are at least two different RE projects currently utilizing NMTCs allocated to Albina Community Bank and ShoreBank Enterprise Cascadia.
 - NMTCs have only recently begun to be utilized for RE projects. They are an innovative tool to bring additional funds to RE projects.
 - Banks are familiar with NMTCs and RE projects that include NMTCs provide lending institution with some level of comfort and familiarity but do not always provide enough comfort for banks to lend.
 - The major problem banks like Farm Credit Services have been unable to solve is how banks can benefit from projects that include NMTCs. The beneficiaries are the CDEs and CDFIs that utilize their NMTC allocation.

Oregon Department of Energy Incentive Department

Bob Repine, Assistant Director of the Oregon Department of Energy (ODOE) will be leading a new, streamlined incentive and tax credit department at ODOE. By the end of November, 2009, The Business Energy Tax Credit (BETC), State of Oregon Energy Loan Program (SELP), and the departments involved with coordinating and monitoring Recovery Act funds, will all be housed in the same office. Currently, these departments work together organically but ODOE wants them to also work together prescriptively, according to Bob Repine. The primary goal is to improve coordination between the departments responsible for administering various incentives, tax credits, loan guarantees, and subsidized loan programs. By the second quarter of 2010, the department will serve as a resource for federal, state, and local tax credits, incentives, and loan programs, in addition to incentives and programs provided by other private and public institutions such as PUDs, ETO, BPA, BEF, etc.

- The new office will serve as a quasi commercial lending institution. It will be a one-stop-shop for clients who are looking for financing for their energy efficiency and renewable energy projects.
- The new financing institution model will also allow the state to better coordinate with private lenders and other incentive providers such as ETO.
- ODOE is very interested in coordinating with Energy Trust to share information and to explore ways to work together.

SECTION 2—Lender Concerns

On the next page is a summary chart that shows the common barriers lenders encounter when underwriting a Renewable Energy project. After completing interviews and creating the chart, Blue Tree followed-up with interviewees to get their response and to be sure that the chart accurately reflects their comments. This chart is from the perspective of the lenders and uses terminology and methodology familiar to a lending institution. This perspective, and the barriers outlined in the chart, is critical to understanding why lenders are unsure and hesitant about providing bank financing to renewable energy projects.

		Bank Response		
		Underwriting Concerns	Lender Barrier	Risk Mitigation
Project Barriers	Collateral	Collateral as a secondary source of repayment	Difficult to assess liquidation value. Projects are very reliant on equipment performance. Equipment is difficult to move, collateral value is tied to equipment "as in place".	Specialty collateral with limited secondary value necessitates high net worth individuals and businesses as guarantors. USDA and DOE guarantees provide additional sources of repayment that can lessen the dependence on guarantor strength.
	Underwriting	Debt Coverage Loan Terms Credit Worthiness of Borrower	Projects rely largely on mechanical systems for cashflow. Loan terms vary, often greater than 7 years. Borrowers often have limited net worth.	Require equipment warranties to last at least the length of the term loan. Set covenants for adequate mechanical and debt service reserves. Define maximum terms based on expected life of specific project. If Borrowers have low net worth then require additional equity investment.
	Due Diligence	Feasibility Contracts Supply	Considerable upfront project development with a lengthy timeline. Sometimes difficult to find feasibility consultants. Contract risk on both the supply and sale side. Often added supply risk due to a commoditized feedstock.	Require Project Developers to handle upfront due diligence prior to engaging bank. Develop a network of industry experts for feasibility work (screened by ETO). Identify law firms capable of reviewing contract risk and deal structure.
	Tax Credits and Incentives	Timing of Cash Flow Borrower Tax Appetite Program Knowledge	Credits/Incentives are usually disbursed post project completion. Incentives are difficult to finance and there's little bridge financing available. Tax credits can be difficult to place. Many of the tax credits and incentives change frequently. USDA guarantees don't usually begin until project completion.	Require increased cash reserves in case incentives run into difficulty. No bridge financing provided unless there are firm guarantees from Borrowers or related party. Borrower must display a solid working knowledge of all applicable government programs.
	Regulatory and Utility Negotiations	Specialized Industry	Uncertainty regarding policies and regulations that can change dependent on the governing administration. Numerous local stakeholders must be engaged. Large early-stage expenses to determine project feasibility, interconnection, transmission, rates, etc.	Underwrite guarantors to protect against project delays and in the event project is unable to reach completion. Qualified review of any regulatory and utility issues and contracts before any funds are disbursed. Require projects to have well prepared contracts and experienced legal representation.

SECTION 3—Financial Analysis

On the next page is a simplified financial example of a typical RE project. The financials cover the entire project lifespan, including early phase sources and uses, construction period financing, and long term operating revenue and expenses. This is to illustrate issues most commonly encounter by lenders attempting to underwrite a RE project.

A lender that is familiar with the obstacles included in the chart from Section 2, will examine the financials of a RE project using a variation of the sample included below. Due to the large financial gaps and revenue received post-completion, it is critical for a lender to be able to estimate the financing gaps and operational deficiencies to be able to successfully underwrite a RE project. The simplified project financials below demonstrate how these gaps and operational concerns are seen by a lender. Taking into account the project obstacles outlined earlier in this report and the financial model below, it is clear why lenders can be hesitant to lend to a RE project.

SECTION 3

Project Cash Flow for a Sample Renewable Energy Project

Total Project Cost: \$2,200,000

	Early Development	Construction	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Capital Uses												
*Soft Costs	\$ 220,000											
Hard Costs		\$ 1,980,000										
Total Costs	\$ 220,000	\$ 1,980,000										
Capital Sources												
**Construction Debt		\$ 1,089,000	\$ (1,089,000)									
***Bridge Financing (ETO & BETC)		\$ 576,550	\$ (576,550)									
****Long Term Debt			\$ 495,000									
Equity Required w/Bridge Loan	\$ 220,000	\$ 214,450										
Equity Required w/o Bridge Loan	\$ 220,000	\$ 891,450										
Project Cash Flow & Equivalent												
Equity Contributed	\$ (220,000)	\$ (314,450)										
Construction Loan Paydown			\$ (594,000)									
Bridge Loan Payoff			\$ (576,550)									
Energy Revenue			\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
Term Loan Payments			\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)	\$ (70,477)
BETC Monetization			\$ 737,000									
Energy Trust Payment			\$ 150,000									
ITC Grant			\$ 594,000									
Depreciation Value (assumes 40% tax rate)			\$ 403,920	\$ 107,712	\$ 64,627	\$ 38,776	\$ 38,776	\$ 19,388				
Total Cash Flow/Equivalent	\$ (220,000)	\$ (314,450)	\$ 793,893	\$ 187,235	\$ 144,150	\$ 118,299	\$ 118,299	\$ 98,911	\$ 79,523	\$ 79,523	\$ 79,523	\$ 79,523
Debt Service Coverage Ratio			6.53	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13

Bridge loans are very difficult for developers to find but critical for the project to proceed. The few banks willing to provide Bridge financing require very strong guarantors or firm commitments of repayment sources.

Not very many project developers can afford to provide this amount of equity, which is why the bridge financing is key. Borrowers are always pushing back on lenders for low equity requirements but banks do need developers to have some financial obligation to the project. Finding the balance is key. If there is a way to limit the amount of equity a developer has to commit, more RE projects will be successfully completed.

Banks will often require projects to keep reserves from heavy revenue in year one to help with debt service reserve, maintenance re:

*Soft Costs include: feasibility, legal, design, permits, testing, etc. For the purposes of this example soft costs are estimated at 10%.
 **Construction Debt assumes 55% Loan to Cost on Hard Costs.
 ***Bridge Financing assumes 65% Loan to Value of ETO & BETC
 ****Long Term Debt balance assumes full ITC credit is applied to the construction loan.

Most subsidies, incentives, and monetized credits are received upon project completion, making it difficult for developers to find financing for early stage expenses. Subsequent operating income will be much less so banks often require projects maintain a cash reserve to cover debt service, maintenance issues, and other project shortfalls.

Assumptions:

Energy Trust Incentive	\$ 150,000
ITC Value	\$ 594,000
BETC Passthrough Value	\$ 737,000

Often, project developers will use the passthrough option to monetize the BETC and show lenders another revenue source.

Depreciation Calculations	
Bonus	50.0%
Year 1	10.0%
Year 2	16.0%
Year 3	9.6%
Year 4	5.8%
Year 5	5.8%
Year 6	2.9%
Total	100.0%

Term Debt Calculations	
Years	10
Rate	7%
Amount	\$ 495,000
Annual Payment	(\$70,476.86)

Depreciation Basis 85%
 Assumed Tax Rate 40%

ATTACHMENT A: List of Interviewees

Organization

- 1 ShoreBank Pacific
- 2 ShoreBank Enterprise Cascadia
- 3 Umpqua
- 4 NW SEED
- 5 ODOE SELP
- 6 ODOE SELP
- 7 ODOE Assistant Director
- 8 Community Renewable Energy Assoc.
- 9 Bonneville Environmental Foundation
- 10 Albina Community Bank
- 11 Albina Community Bank
- 12 Farm Credit Services
- 13 Farm Credit Services

Project Finance Checklist

Project Name _____ Date Initiated _____

Item Description	Prep'd By	Date Complete	Bank Accepted?	Notes
Business Plan (Project Overview)	Client			
Project Cash Flow Projections	Client			Projections for life of the project
Equipment List	Client			Manufacturer, Specs, Pricing
Sources/Uses	Client			Itemized cost breakdown
Ownership Structure	Client			% Ownership, Organization structure, Cash equity
Feedstock Contract	Client			(as required)
Off take Agreement	Client			(as required)
Feasibility Study	Consultant			Test of system capability and capacity arranged by bank, fees paid by client
Phase I (If Applicable)	Consultant			Arranged by bank, fees paid by client
Appraisal (Equipment and/or R/E)	Appraiser			Arranged by bank, fees paid by client
System Warranty	Contractor			Inspected by the bank to meet minimum requirements
Legal Review	Attorney			Arranged by bank, fees paid by client
Insurance	Client			Bank to be name loss payee for at least the value of the loan
BETC Credit Application (OR)	Client			BETC pre-approval
BETC Purchase Contract (OR)	Client			Contract for BETC purchase if credit is to be sold
Energy Trust Application (OR)	Client			Rebate associated with renewable energy

Project Finance Quick Summary

Date Initiated _____

Project Name _____

Notes

Project Summary	
Terms of Loan	
Projected DSC	
Debt Service Reserve	
Cash Equity/Total Deal (%)	
Hard Assets in Budget (%)	
Technology	
Contractor (Turnkey?)	
Explain feedstock contract	
Explain offtake contract	
USDA	
BETC	
BETC Purchaser?	
Guarantor Net Worth	
Guarantor Liquidity	
Project Timeline	
Mission Elements	