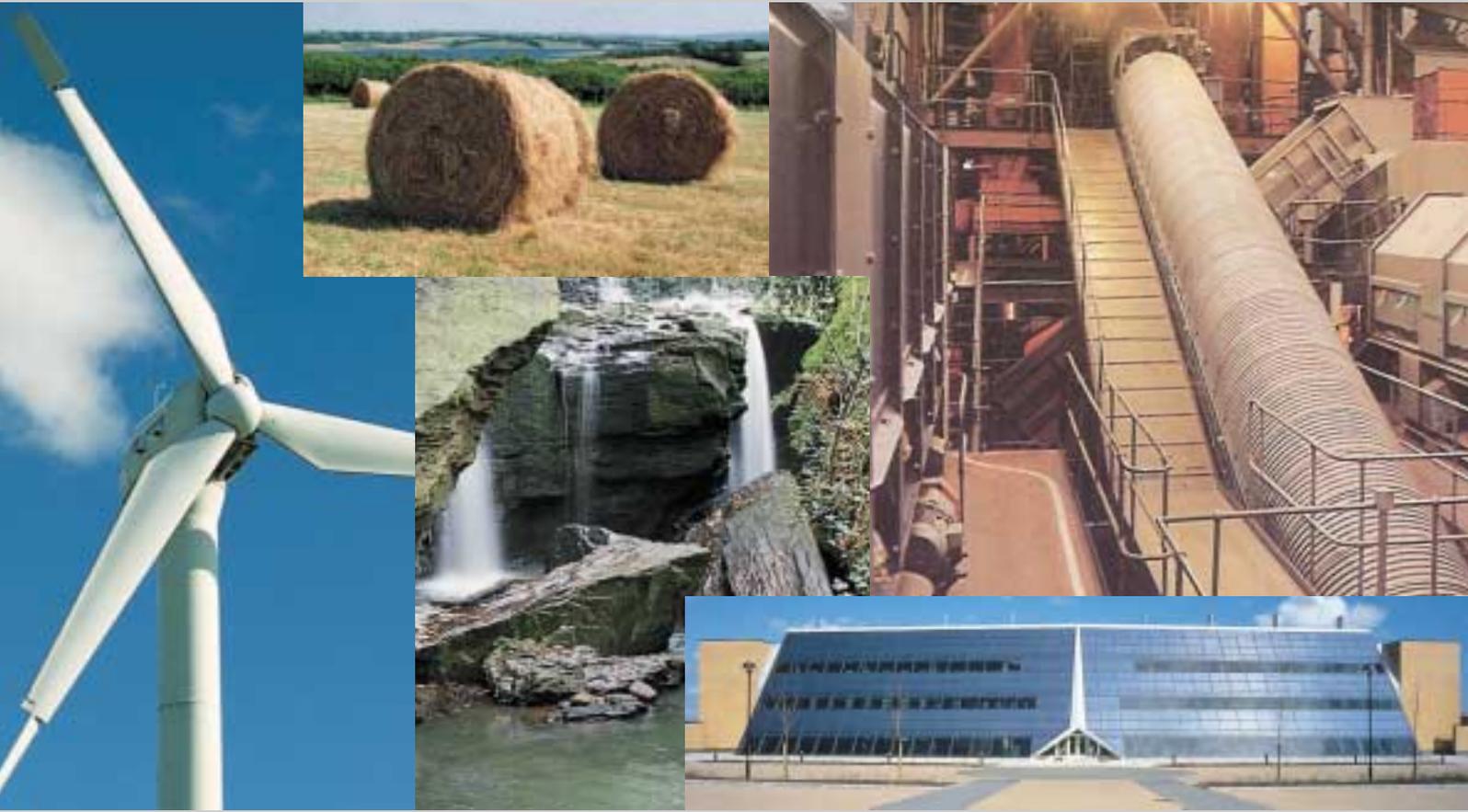


financing renewable energy projects



A GUIDE FOR DEVELOPERS

financing
renewable
energy
projects

A GUIDE FOR DEVELOPERS

Prepared by
FIELDSTONE PRIVATE
CAPITAL GROUP LIMITED
for the Department of
Trade and Industry
November 1993
Revised by ETSU
February 2000

ETSU K/FR/00028/REP

table of contents

		Page
1	INTRODUCTION	3
2	POSSIBLE FINANCING ROUTES FOR RENEWABLE ENERGY SCHEMES	4
	2.1 FINANCING ALTERNATIVES	4
	2.2 FACTORS WHICH AFFECT THE FINANCING DECISION	5
3	DESCRIPTION OF THE PRINCIPAL FINANCING ALTERNATIVES	6
	3.1 ON BALANCE SHEET	6
	3.2 LIMITED RECOURSE PROJECT FINANCING	7
	3.3 CO-DEVELOPMENT WITH A FINANCIALLY STRONG PARTNER	12
4	TYPICAL FINANCING TERMS	13
	4.1 STATUS OF BANK MARKET	13
	4.2 LEVEL OF DEBT	13
	4.3 DEBT SERVICE COVERAGE RATIO	13
	4.4 FINANCING COSTS	14
	4.5 REPAYMENT TERM	14
	4.6 COVENANTS	14
	4.7 CONDITIONS PRECEDENT	15
	4.8 INTEREST RATES - FIXED OR FLOATING	15
5	FINANCING SOURCES	18
	5.1 ON BALANCE SHEET	18
	5.2 LIMITED RECOURSE PROJECT FINANCING	18
6	KEY POINTS FOR A SUCCESSFUL FINANCING	21
	6.1 CONSIDER THE NEED FOR EXTERNAL RESOURCES/ADVICE	21
	6.2 VERIFICATION OF AVAILABLE RESOURCE	21
	6.3 CAREFUL STRUCTURING OF THE CONTRACTUAL ARRANGEMENTS	22
	6.4 EARLY ATTENTION TO PLANNING AND CONSENTS	22
	6.5 APPROACH TO LENDING INSTITUTIONS	22
	6.6 INFORMATION MEMORANDUM	24
	6.7 FINANCIAL ANALYSIS AND MODELLING	26
	6.8 "PROJECT MANAGEMENT" OF THE DEVELOPMENT PROCESS	26
7	TIMETABLE	28
	7.1 PROJECT DEVELOPMENT PHASE	28
	7.2 PROJECT FINANCING PHASE	28
8	CONCLUSION	30

1

introduction

The introduction of the Non-Fossil Fuel Obligation (NFFO) under the 1989 Electricity Act has resulted in a rapid expansion in the number of renewable energy power generation projects in the UK. The early NFFO projects required substantial capital to be raised from the private sector in the form of loans or equity at a time when the overall lending market was contracting due to the recession in the world economy. In addition, heavy loan losses due to over-ambitious lending against property in the 1980s and increased capital requirements imposed by bank regulators caused further contraction in the bank market. While market factors change raising finance is still a major challenge for renewable energy project developers.

Despite these difficulties, many renewable energy projects have succeeded in arranging a financing package. The industry has proved itself, with 299 projects with a total installed capacity of 733MW DNC operational under the NFFO (as at 30 September 1999) and a corresponding growth in lender confidence. As the number of lenders and investors taking a serious interest in renewables has increased, competition has led to improvements in financing terms.

The Government is in the process of replacing the NFFO with a new market support mechanism for new renewables projects. As a result, new power purchase arrangements are likely to develop. However, the essential features of arranging finance for renewables will remain the same.

Arranging finance for a renewable energy project is not a task to be underestimated by developers, especially those with no previous experience in raising finance or establishing successful power generation projects. It is important that developers bear in mind the following:

- The process of arranging financing is **time consuming**.
- The technical, contractual and consent aspects of a project all affect the financing.
- Problems will emerge that require **determination** and, often, **ingenuity** to overcome.
- Project lenders will carefully **scrutinise** every aspect of the project. Attention to detail and anticipation of lender concerns are very important.
- In particular for small projects, it may be difficult to attract the attention of lenders or investors. A developer may believe that the project will “sell itself” based on its own merits, but in reality the developer will have to adhere to the strict terms and conditions applied to project financing.
- Project lenders will have priority access to a project's cash flow; the shareholders may not receive much of a return on investment until the project debt is paid off.

In summary, the **technical difficulties** of a project, which in themselves may appear daunting, are often exceeded by the **complexities of raising the necessary finance**.

The purpose of this guide is to provide a summary of the approach a developer could follow when trying to raise finance for a renewable energy project. The guide gives practical help in assessing financing options, preparing an information memorandum (a project business plan) and approaching lenders.

possible financing routes for renewable energy schemes

2.1 FINANCING ALTERNATIVES

Most renewable energy projects are highly capital-intensive and will require the developer to raise large amounts of finance well in advance of the start of operations. Furthermore, the route which is adopted to raise the finance will have a major bearing on the manner in which the whole project will be developed. It is therefore important that, at an early stage, consideration is given to the available financing options so that the project as a whole is structured accordingly.

Although every project is different, and a variety of means have been used to date, there are generally four possible routes for financing a project:

- Use of internal company or personal reserves, or obtaining funds from friends and business associates. Except for the smallest renewable energy projects, it is unlikely that sufficient personal reserves would be available to meet the total cost of the project. It may not be suitable to use company reserves and hence one of the alternative routes will need to be considered.
- Use of bank loans secured against other parts of the developer's business or major assets ("on balance sheet finance") or personal guarantees often linked to property owned by the developer.
- Co-development of the project with a financially strong joint-venture partner who is more readily able to raise the necessary finance.
- Limited recourse project financing, whereby bank loans are secured largely against future cash flows rather than just physical assets, and involving a series of complex contractual arrangements.
- Leasing is another source of finance often discussed, and although potentially it offers benefits to a renewable energy project, in practice it is a route rarely available. Leasing gives the lessee use of the project in return for regular payments to the lessor, who remains the legal owner. The benefits of tax allowances claimable by the lessor are passed on to the developer by way of reduced lease payments. Operating leases, being short-term and cancellable, are unlikely to be used to finance major equipment in a renewables project. Finance leases are non-cancellable and normally cover the whole of the project's economic life. They are most suited to high-volume standard equipment with predictable residual values, and as such are rarely available for renewable energy projects. Overall, leasing is unlikely to be a realistic option, except for very large projects where the expense of establishing a special leasing structure can be borne by the project.

The difficulty of raising finance on acceptable terms for a renewable energy project should not be underestimated, especially for those developers with limited resources and no previous experience in establishing similar projects. Developers who recognise that they have a potentially viable project, but which they will not be able to exploit under their own resources, could consider co-developing the project with a stronger partner better able to raise the required finance. How this may be achieved is discussed in Section 3.3.

The two most likely financing routes are therefore on balance sheet finance or limited recourse project finance. Both typically use bank loans to provide the majority of the required capital, but it is the lender's security arrangements which differ significantly between the two routes. With limited recourse project financing, the project borrows on a stand-alone basis. While some guarantees may be required, the lender's repayments are secured primarily by the project's assets and cash flows with limited recourse to the developer. In an on balance sheet financing, lenders look to general corporate assets as security for the loan as well as external guarantees (often parent company guarantees) and other related external collateral if the project's cash flow is insufficient to repay the debt.

2.2 FACTORS WHICH AFFECT THE FINANCING DECISION

At an early stage in the project's development, the developer and sponsors should therefore consider whether to finance a project on a limited recourse basis or on an on balance sheet basis by addressing the following questions:

- Do the developer/sponsors have the financial wherewithal to provide the full financing requirement from within their own resources, and do they wish to use them for the project?
- Is the magnitude of the potential financial obligations such that, if the project were a failure, there would be serious damage to the financial health of the developer?
- Are there specific project risks with which the developer is not comfortable and desires to see laid off in a structured manner to third parties?
- Are a number of developers/companies with different financing objectives and capabilities involved in the project?
- Is the project in a non-core business segment for the developer, where the shareholders and financial markets would expect the company's exposure to be limited?
- Is the **size** of the financing requirement too small to attract the interest of project finance lenders, who are unlikely to consider a transaction where the debt component is less than about £5-10 million, unless there are special factors which affect the bank's decision?

On balance sheet finance and limited recourse finance are discussed in more detail in the next section, indicating how the answers to these questions effectively point towards the desired financing route.

description of the principal financing alternatives

3.1 ON BALANCE SHEET

On balance sheet financing is likely to be used only by financially strong sponsors. While it is unlikely to be a practical alternative for a developer with limited financial resources, it is often used by stand-alone, first-time developers for very small projects.

An on balance sheet financing, if it is available, has the following characteristics:

- **Simplicity** - it is relatively easy and quick to arrange
- **Cost** - it is usually cheaper in terms of arrangement and legal fees and the annual cost of borrowing may be lower
- **Structure** - it will normally reflect a looser, more flexible financing structure. While still important, the tight network of contracts, which create the risk transference in a limited recourse project financing, is less critical to the lender
- **Risk Acceptance** - the sponsors are generally content to accept the majority of the project risks; although on balance sheet financing structures obviously can also allow for risk transfer, the degree of risk transfer is much less than in a limited recourse project financing.

A typical example of a sponsor who might elect to finance a renewable energy project on balance sheet would be a large food manufacturing/processing company that decided to develop a chicken litter energy-from-waste project where the project, in effect, became an integral part of the business to dispose of chicken litter economically.

On balance sheet finance may be the only option for small projects with a capital cost less than about £5-10 million. Limited recourse project financing techniques are difficult to implement on small projects due to the high level of initial arrangement and development costs. Project finance lenders may lack interest in small projects - where there is often as much (if not more) work required than with a larger project, but significantly less income to be earned. Small developers may be able to obtain the same benefit by a "co-development" with a financially strong partner, as described later in this section.

Often, in reality, the necessary funding for small projects will be provided by way of **equity capital** from the sponsors and/or other sources of equity. This has the disadvantage of being expensive (in terms of cost of capital) and is not tax efficient.

Possible sources of finance for smaller projects include:

- local entrepreneurs and businessmen
- utility companies interested in diversifying into generation projects
- equipment suppliers and/or contractors, who might agree to invest in return for an equipment contract, etc

- community finance initiatives
- renewable energy, green or ethical investment funds.

Alternatively, developers may be able to finance small-scale projects in the traditional manner of a "small business." Under this approach, a developer and (likely) the high street branch of a UK bank would approach the project as a start-up business. However, the developer would probably be required to:

- provide or arrange equity in the range of 50% of the project's costs (which is considerably more than under a project finance structure); the "project" loan would be secured principally against the **liquidation value** of the business (the value of the land, an appraisal of the re-sale value of the equipment etc), which may be low in relation to the initial capital costs; **and/or**
- provide external collateral (or personal guarantees etc) to support any borrowings that were not covered by a liquidation valuation of the business.

3.2 LIMITED RECOURSE PROJECT FINANCING

A developer is likely to be able to use project finance if the capital cost of the project is at least £5-10 million. However, firm contracts must be available from all major project participants - fuel supplier, equipment supplier, construction contractor, project operator and power purchaser. Reasons for choosing project finance include the desire to reduce the risk to the sponsors or to increase the debt funding in the project. Project finance may also be suitable for multi-sponsor projects or when the project is a non-core business.

The chart overleaf depicts a typical limited recourse project financing structure.

The principal parties likely to be involved in a project are:

- Shareholders
- Lenders
- Contracting parties
 - Turnkey construction contractor
 - Subcontractors, equipment suppliers
 - Power purchaser
 - Fuel/waste/feedstock supplier (if applicable)
 - Network operator
- Operator.

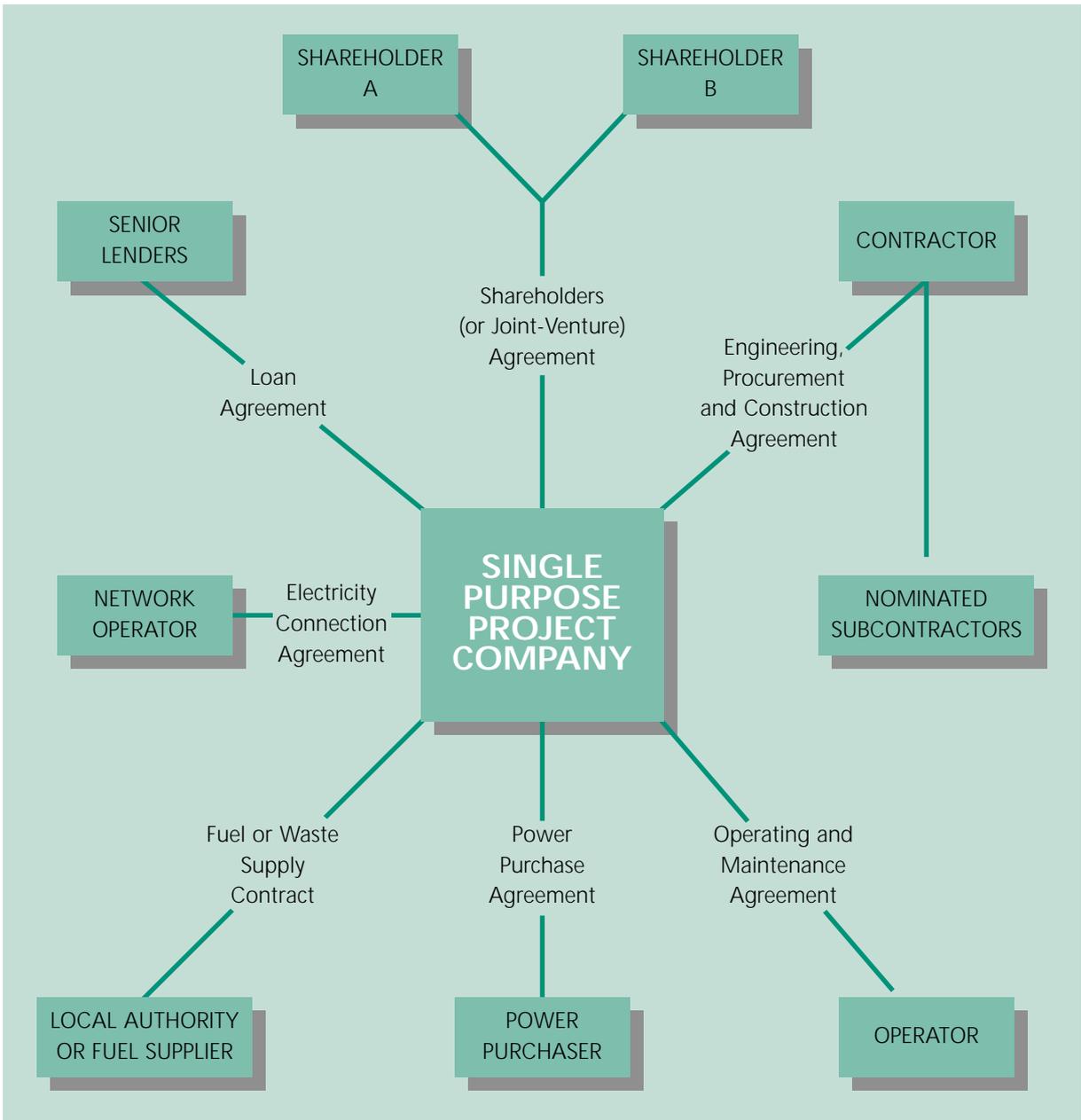
3.2.1 THE SECURITY STRUCTURE

In a limited recourse project financing, the lenders are not able to rely on the balance sheet of the sponsor for repayment, but rather on the project to generate a stable and predictable stream of cash flow necessary to ensure repayment of their loans. In order for the lenders to be assured that they have the project cash dedicated to repay their loans, the lenders will "take security." Taking security over the project assets and contracts gives the lenders the ability to

control the project cash and even step in and operate the project in adverse situations (for example, where the project is in default and not repaying its debt). The most common ways of taking security - or collateral - are:

- Assignment of priority rights to the project cash flow
- Mortgage/fixed and floating charge over the physical assets
- Assignment of the project contracts
- Contractual undertakings
- Shareholder undertakings
- Insurance
- Bonding.

Note that, while lenders will take security over the project assets, **cash flow** from the project is considered to be the primary source of repayment of the project debt, **not** sale of assets.



3.2.2 THE PROJECT CONTRACTS

The commercial contracts form the basis of the security structure which creates the project cash flow and hence underpins a project financing. For renewable energy projects, the typical principal contracts are:

- Engineering, Procurement and Construction Agreement (may be separated into more than one agreement)
- Fuel or waste supply contract (if required)
- Operating agreement
- Power purchase agreement
- Shareholders (or joint-venture) agreement.

Points to note on the principal elements of these contracts are as follows:

- **Turnkey Construction Contract:** Often a (creditworthy) contractor will undertake to carry out design, engineering, procurement and construction on a fixed price turnkey basis. The turnkey contractor will, in effect, guarantee the performance of subcontractors and equipment suppliers and assume “single point” responsibility for the overall construction of the project. The contract will contain completion tests and liquidated damages which will be payable if the tests are not met by the specified date. An experienced and credible turnkey contractor is key to the development of a project as lenders will be placing significant reliance on the contract to ensure that a project is completed on time and from a technical perspective, performs as expected. Lenders may require bonding or external guarantees to support the obligations of the turnkey contractor (eg to pay liquidated damages).

If more than one contractor assumes these responsibilities, project development may become more complex as the lender will want to ensure that responsibility for each separate point is clearly delineated. Furthermore, risk allocation, insurance, bonding and warranties will be more complex.

- **Fuel or Waste Supply Contract:** Lenders will require the term of a fuel supply contract to exceed the term of the debt by a reasonable margin (ideally 2 or 3 years). The contract will specify the price, amount and characteristics of fuel to be delivered on a daily, monthly and annual basis. The lenders will expect the fuel/waste suppliers to be creditworthy entities with access to assured sources of fuel/waste over the term of the contract.
- **Operating Agreement:** Lenders will expect to see the operation of the plant being carried out by a company or entity with an appropriate track record of successful operation. This is, of course, more important to technologies where operation is more complex, such as energy-from-waste, rather than hydroelectric or wind-powered projects, where operation is relatively straightforward (although still important). Typically, operating agreements will provide for reimbursement of costs plus an incentive-related performance fee. Lenders will want the ability to terminate the contract in case of poor performance.
- **Power Purchase Agreement:** This contract is the cornerstone of most renewables projects. The power purchaser must be creditworthy. Lenders will want the contract term to extend beyond the term of the loan. The contract will be assessed by the lenders for its economics and conditions that might cause early terminations - lenders will want the ability to cure any defaults rather than face termination.

- **Shareholders (or Joint-Venture) Agreement:** This agreement governs the relationship between the shareholders (or joint ventures, partners etc). The lenders will review it carefully, particularly provisions relating to management control and transfer of ownership.

Each of the contracts which the project company signs must be assignable to the lenders and will form part of the lenders' security. This assignment allows the lenders (or, in practice, their receiver) to "step into the shoes" of the project shareholders and take control over the project, its assets and its operation, while preserving the benefit of the contractual support, if the project defaults on its debt repayments.

3.2.3 SHAREHOLDER UNDERTAKINGS

In a fully "non recourse" project, there will be no undertakings given by the shareholders to the banks, with the exception of an undertaking to subscribe the agreed equity. In most cases, however, the lenders will look for additional shareholder support (ie "limited recourse") to cover those aspects of the project where they are not satisfied that the risks are covered sufficiently. Such undertakings may be as follows:

- **Completion Guarantee:** For projects where there is a significant risk of capital cost overruns, delays etc, or of completion not being achieved, lenders may require that the shareholders guarantee the debt until the completion tests are met. In this context, lenders are particularly reluctant to take any element of new technology risk until it is proven in operation. Construction contractors will also be required to provide completion and generation guarantees and warranties (see below).
- **Specific Funding Obligations:** Under certain circumstances, shareholders may be required to commit funds on a contingent basis for the future. For example, if a change of law would entail capital expenditure which could not necessarily be funded by the project company, lenders could require the shareholders to commit to provide the necessary funds.

3.2.4 INSURANCE

Lenders will insist on approving the proposed insurance arrangements before committing funds to a project. They will then take an assignment over, or joint interest in, the insurances that are actually taken out. In the event of destruction of or damage to the project, this will result in the direct receipt of insurance proceeds by the lenders, who will then have the right either to permit the funds to be used for repair/replacement or, alternatively, to repay the loans. This latter course of action would only occur if the lenders felt that the project facilities were uneconomic to repair (after taking into account the insurance proceeds).

3.2.5 BONDING

Lenders may require bonding to secure the performance of contractors, particularly those involved in construction and equipment supply. The bonds will typically be payment obligations (on-demand or subject to pre-agreed conditions) in favour of the project company. Lenders will take an assignment over the bond to ensure that any call on the bond results in payment to a bank account which they control. The objectives of bonding may also be achieved by guarantees or standby letters of credit provided by banks.

3.2.6 RISK TRANSFER

The skill in structuring a successful limited recourse project financing for a renewables project is to transfer or allocate specific risks to external parties best able to manage, absorb or mitigate the risk in the most efficient manner, thereby leaving only a modest residual risk with the developer. These external parties, and the principal risks which typically could be allocated to them, can be summarised as follows:

PRE-COMPLETION RISKS		
RISK	THIRD PARTY	COMMENTS
Technology	Contractor/Equipment Supplier	Risk transferred through monetary damages for performance shortfall.
Delay	Contractor Insurance	Risk transferred through monetary damages for delay in completion. Certain delay risks can be covered by insurance.
Capital Cost Overrun	Contractor	Contractors are often prepared to offer fixed-price turnkey contracts, thereby accepting much of the capital cost overrun risk. Equity may be required to provide completion cost guarantees, particularly for new technologies or small, less well known construction contractors.

POST-COMPLETION RISKS		
RISK	THIRD PARTY	COMMENTS
Operating	Operator Insurance	Project operators can be prepared to guarantee minimum performance levels of a project. The insurance markets may cover the risk of certain events affecting a project.
Market (the risk that there is an assured market for a project's output at a relatively predictable and stable price level)	Offtaker Commodity Markets	An offtaker of a project's output may be prepared to offer a long term contract at a minimum or "floor" price. In a power purchase agreement the terms and price should be clearly defined and there should be no 'market out' clauses allowing for contract cancellation due to market conditions. The commodity markets (eg the futures market) can be used to absorb commodity price risk.
Financial (Interest and/or Exchange Rate Risk)	Financial Markets	The financial markets can be used to hedge interest rate or currency risk.
Raw Material/ Fuel/Waste Supply	Supplier	A supplier may be prepared to offer a long-term raw material/fuel/waste supply contract. In certain circumstances, a supplier could be persuaded to accept a portion of the market risk by providing raw materials or fuel/waste at a price linked to the project's output (eg a "netback" arrangement). Alternatively, any price escalator in the fuel or waste supply could dovetail with that in the Power Purchase Agreement.

The correct allocation of risk between third parties and the project company itself involves a detailed analysis and judgement of the risk tolerances of third parties and the effective cost of transferring the risk to such a third party. Each party that agrees to accept a project risk charges, in one form or other, the project company for taking that risk off its hands. While in certain cases, the charge or cost may be direct - eg a fee for providing an interest rate hedge, in many cases the cost is indirect and may be only an "opportunity" cost, such as the lack of opportunity to benefit from higher future commodity prices by having signed a long-term, fixed-price contract for a project's output.

A delicate balance must be struck between the pressure from the financiers, in particular the lenders, to minimise the risks retained within a project, and the costs of transferring risks out of a project to third parties. Ultimately, if the risks of the project are high, the costs levied by third parties to bear this risk may exceed the expected returns that will be earned by the project.

3.3 CO-DEVELOPMENT WITH A FINANCIALLY STRONG PARTNER

Many smaller renewable energy project developers, especially those with no previous experience in establishing power generation projects, are not able to finance their projects on balance sheet, and alone do not have the time and resources to undertake the necessary work to arrange a limited recourse financing. In these cases it may be appropriate to consider co-development of the project with a stronger partner better able to raise finance.

With the co-development approach, after the initial development phase the developer transfers responsibility for the financing to a partner (eg an electricity supply company, waste disposal company, etc) who has the willingness and ability to raise the finance either on balance sheet or via limited recourse project finance. Some developers may be willing to sell their entire interest in their projects and relinquish control, but most wish to retain some ongoing involvement.

4 typical financing terms

4.1 STATUS OF BANK MARKET

The bank market, generally, is keen to lend to well-structured renewable energy projects. However, the earlier comments should be noted about the reluctance of banks to look at project financing loans under about £5 million. Some banks have a minimum project financing loan level of £10 or £20 million. Banks' willingness to consider small projects varies with the lending climate. If credit conditions are tight or banks are seeing many attractive lending opportunities, small projects will have a particularly tough time. In periods of "easy credit" small projects will see more interest from the banks.

It is extremely difficult to indicate typical terms for an on balance sheet financing because the terms will relate to the normal terms and conditions for the borrower's business activities. These conditions are based on numerous factors, including the company's turnover, assets, amount of other debt, and security available for the financing.

The following section on financing terms essentially relates to project finance, but many of the aspects covered will also be relevant to an on balance sheet financing.

4.2 LEVEL OF DEBT

The level of debt (or gearing) in a project financing is typically a function of market conditions, the type of project being financed and the risk retained by the developer within the project. As a general guideline, 60-80% of the costs can be provided as debt. Renewable energy projects tend to be considered medium to high risk projects.

	DEBT (%)	EQUITY (%)
Low Risk Project	85-90	10-15
Medium Risk Project	75-85	15-25
High Risk Project	60-75	25-40

4.3 DEBT SERVICE COVERAGE RATIO

The debt service coverage ratio is the ratio of cash flow available for debt service divided by debt service (principal and interest) and is usually on an annual basis, although it may be measured as often as quarterly. Clearly, a project's **gearing** will affect the project's **coverage ratio**, and the two are closely related.

Lenders will typically require an annual coverage ratio in the range of 1.35 to 1.60, depending upon the risk profile of the project and the time in the project life. Lenders anticipate lower

debt service cover ratios in early years but expect them to escalate over the life of the project. Note that lenders will also want demonstrated the robustness of the project economics (and hence average ratios comfortably above 1.0) under a variety of pessimistic scenarios. As the lender's return is a fixed margin over base lending rates, with no scope for an improved return if the project is very successful, lenders look especially closely at coverage ratios, which indicate the cash available to repay debt, and are less concerned about the project internal rate of return (IRR).

4.4 FINANCING COSTS

The following summarises the typical costs associated with a project financing:

	PERCENTAGE OF FUNDING	INITIAL ARRANGEMENT FEES (%)	ANNUAL FINANCING COSTS (%)	OTHER ARRANGEMENT COSTS (%)*
Debt			Margin Over Base Rate	
Small Project (<£5M)	50-80	2-3	2-3	2-3
Medium Project (£5-20M)	60-90	1.5-2.5	1-2	2-3
Large Project (£20M+)	70-90	1.25-2.0	1-1.5	1-2
Equity			(Post Tax) Return on Equity	
Small Project	20-50	2-5	25-30	2
Medium Project	10-40	2-5	20-25	1
Large Project	10-30	2-3	15-20	0.5

*Legal, advisory, accounting and consultants, etc.

4.5 REPAYMENT TERM

Repayment provisions are usually a function of the project economics, and lenders will require full repayment of their loans well within the period of the major contracts, in particular the power purchase agreement (and/or the fuel/waste supply contract for an energy-from-waste project). Lenders will normally be prepared to see their repayments tailored specifically to the cash flow profile of a project. A typical repayment term would be approximately **ten years** from start-up of the project, with a **maximum** of 13-15 years, depending on the term of the major contracts.

4.6 COVENANTS

The lenders will normally insist on a full package of “covenants” (or undertakings from the project company). In particular, the lenders will normally restrict distributions of dividends to the shareholders in the event of a project performing badly (as measured, for example, by the annual debt service coverage ratio falling below a “trigger” level of around 1.3-1.4), even though their debt service is still being met. In addition, lenders may require a reserve of cash to be maintained in the project company as a “cushion” against an unforeseen problem.

This cushion (often called a debt service reserve account) is often equal to between three and six months’ estimated debt service, and may be as high as 18 months’ estimated debt service.

Occasionally, lenders may require specific guarantees from the shareholders if the lenders are not comfortable with certain risk elements.

4.7 CONDITIONS PRECEDENT

Before the lenders will advance the funds, they will require a number of “conditions precedent” to be met to their satisfaction. These conditions precedent typically include:

- All project contracts and agreements being executed and in full force and effect.
- A satisfactory report from an independent technical consultant (usually retained directly by the banks).
- All permits, consents etc, being in place.
- A report from an insurance consultant, and all insurances in place.
- Execution of loan and security documentation, and registration of security.

4.8 INTEREST RATES - FIXED OR FLOATING

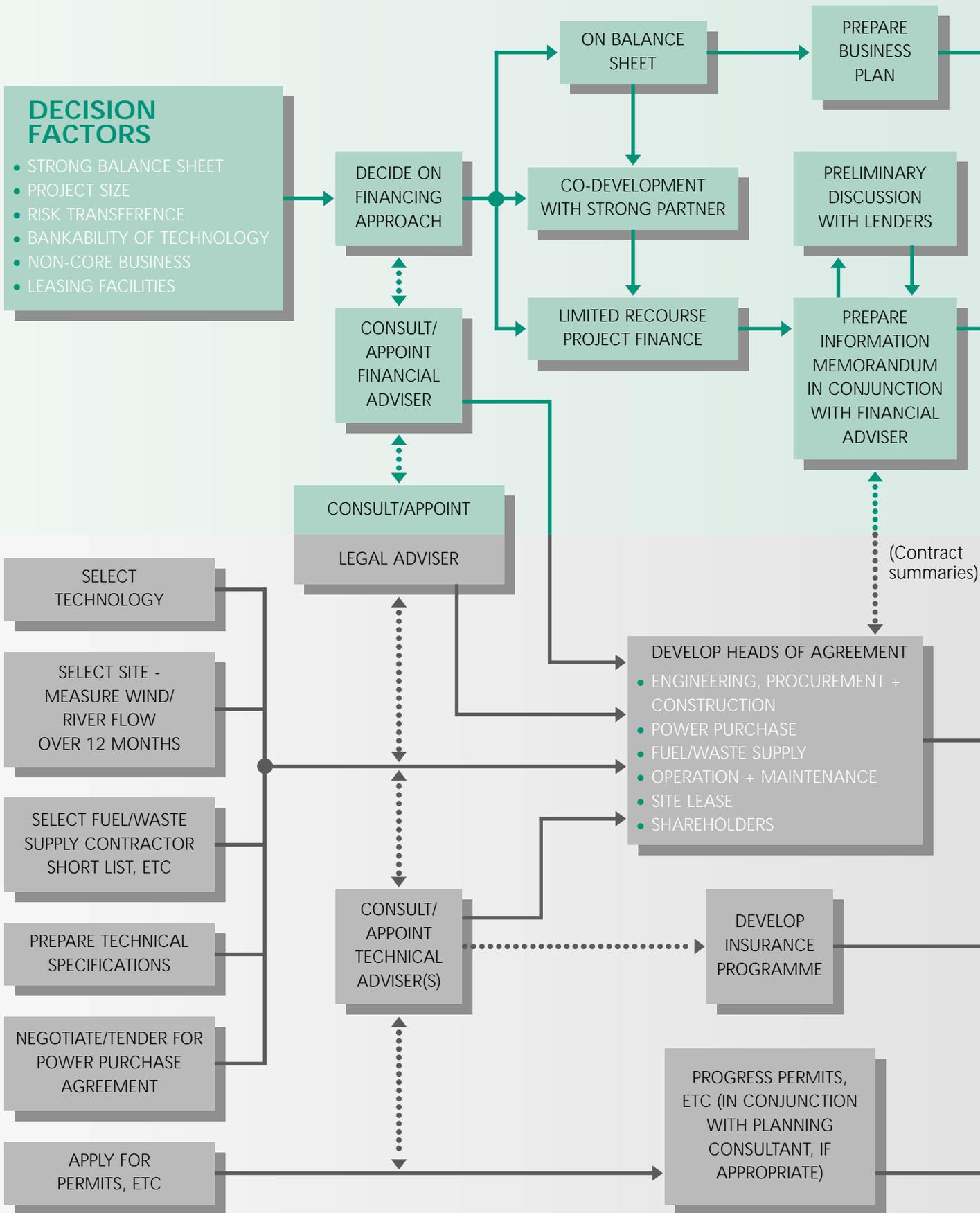
Lenders will typically provide **floating** rate debt - ie the basic interest rate will vary with, for example, changes in Base Rates or in LIBOR (the London Inter-Bank Offered Rate - the benchmark for many larger loans). In a project where revenues are escalated by reference to the RPI, borrowing on a floating rate basis may be acceptable given the link between interest rates and inflation rates.

If it is important for the project’s economics that interest rates are **fixed**, this can often be achieved by purchasing financial instruments (eg interest rate swaps, caps etc) from banks. In fact, lenders may insist that some or all of a project’s debt is fixed.

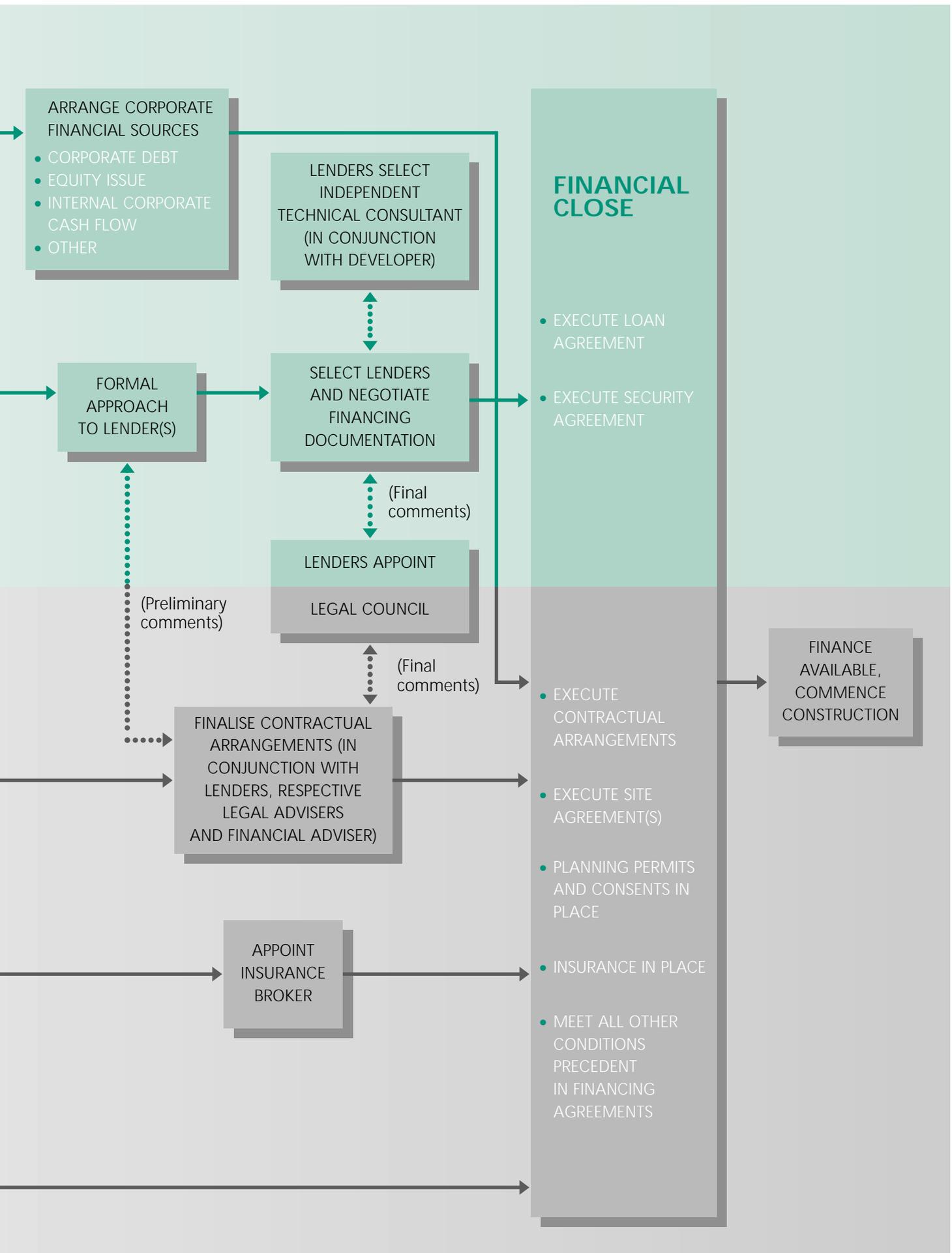
FLOW DIAGRAM FOR PROJECT DEVELOPMENT

FINANCIAL STREAM

CONTRACTUAL STREAM



TIME



5.1 ON BALANCE SHEET

With an on balance sheet structure, the financing sources would include the typical sources of **corporate** financing for the sponsors. A company would first approach its normal lender. For a new developer, finding an appropriate lender may be a difficult task. High Street branches of banks are not accustomed to assessing renewable energy projects and, as a result, may decline interest without due consideration, unless the business plan is extremely well presented. If difficulties are encountered, it may be more productive to approach the specialist energy or project finance department at the bank's head office. Financing could be sourced from an equity placement, a bond issue, bank financing (in the name of the sponsor), internal cash flow etc, **or** a specific bank financing in the name of the project company supported by parent company guarantees (PCGs) from creditworthy sponsors.

Note that grant aid may be available for projects employing certain technologies or for new applications. Grants are typically viewed as a reduction in the overall capital costs by bankers for the purposes of considering an appropriate debt/equity ratio etc.

5.2 LIMITED RECOURSE PROJECT FINANCING

In a typical limited recourse project finance, there is a variety of sources of capital that combine to provide the necessary funding for a project:

- Equity
- Senior debt
- Subordinated debt (occasionally - as discussed below)

5.2.1 EQUITY

The equity capital is the true risk-taking capital that is invested in projects. The equity investors expect to receive an attractive return if the project is successful, but are the first to suffer a lower return (or ultimately lose their investment) if the project is not a success.

Typically, equity is provided by the project sponsors. For renewables projects, there are institutions and other investors that could also provide equity capital. These include the following:

- Equipment suppliers and contractors may offer equity to help facilitate a sale. While their preference is likely to be subordinated debt with its slightly lower risk, they may also be prepared to invest equity. These investors may also be prepared to play the same role as the electricity companies, described in a point overleaf.

- Waste disposal companies (principally for energy-from-waste projects) who are seeking diversification from traditional waste disposal methods.
- Electricity Supply Companies, who are also power offtakers, looking for unregulated income, or other utility companies (eg generators, water companies, foreign utilities etc). In fact, these so-called “trade” investors may be prepared to provide the full amount of the financing for the project and offer the initial developer a “carried interest” in the project, thereby effectively taking over after the initial development work has been performed.
- UK institutional investors (pension funds, life insurance companies, particularly “green” funds, etc). Such investors are more likely to invest in larger schemes and where the risks are less speculative.
- For smaller projects, local entrepreneurs and businessmen may be interested in investing in renewables schemes with an attractive return.
- Community finance, where local people invest equity in a project, may also provide a source of funds for smaller projects.

Certain environmental/ethical funds have increased interest in renewable energy, and these “ethical investments” are developing as a source of funding for projects.

A list of possible equity investors in renewable energy projects is available from the New & Renewable Energy Enquiries Bureau at ETSU (see Section 8 for contact details).

5.2.2 SENIOR DEBT

The usual providers of senior debt for project finance, including renewables projects, are the large, international commercial banks who have the expertise to assess project finance risks and the appetite to lend to these types of risk. These banks would include:

- Head offices of the UK high street banks.
- Major European banks (principally Swiss, French, German and Dutch).
- Japanese banks.
- North American (US and Canadian) banks.

A list of banks that have expressed an interest in lending to renewable energy projects in the UK is available from the New & Renewable Energy Enquiries Bureau at ETSU (see Section 8 for contact details).

There are approximately 30-40 banks generally active in the UK project financing market, of which 10-15 could be classified as market leaders able and willing to lead and arrange a transaction and to mobilise other banks to follow. In any large lending transaction, banks typically like to share the risk and “syndicate” the senior debt to a number of other banks.

Particular banks specialise in certain types of transactions, often drawing on expertise they have developed elsewhere in the world. For a developer contemplating selecting a bank or banks for a renewables project, it is important that the developer approaches the right banks that have the expertise and interest in the specific type of project or technology. Financial advisers can assist in targeting the correct banks and advising on the specific way to approach them.

- **Market capacity** - the capacity of the senior debt market is generally large, but depends very much on the type of transaction and the expertise and appetite of banks to lend to specific types of project. The following table summarises in general terms the current and anticipated market capacity and appetite for types of renewables project in the UK.

Type of Project (for a project financing)	Number of Lead Arranging Banks	Number of Participant Banks	Capacity
Energy from Waste (combustion)	Moderate	Moderate	Moderate/High
Wind	Low	Moderate	Low/Moderate
Hydro	Low	Low	Low
Special Industrial Wastes	Low	Low	Low
Agricultural Wastes and Crops	Low	Low	Low
Landfill Gas	Low	Low	Low

- **Leasing** - as explained earlier, leasing is really only an effective **source of credit** for a project where there is standard equipment with a clear second-hand value, or for a major project where the leasing costs can be absorbed into the financing. It therefore has a limited application as a **source of credit** for a project financing, and more typically is used to optimise the **tax benefits** associated with a large project, enabling a leasing company to provide lower-cost financing in return for ownership of the tax benefits of the project. Under this approach, however, UK leasing companies will typically require a bank guarantee of their lease payments. Nonetheless, leasing can result in lower overall financing costs.

5.2.3 SUBORDINATED DEBT

Subordinated debt (often called mezzanine debt) is a layer of financing that comes in priority of payment after senior debt and before equity. Subordinated debt is not always available, for renewables projects but sometimes has been used.

Subordinated debt retains the essence of debt while incorporating attributes of equity. It is a true hybrid instrument that can be designed for specific situations to look more like debt or more like equity depending upon the requirements. It plays a role in bridging the gap between what the senior lenders are prepared to provide and how much equity is available for a project.

Providers of subordinated debt for renewables projects are likely to be equipment suppliers and contractors, who would normally tie the provision of financing to an equipment supply or construction contract. There have also been cases where financial investors have supplied subordinated debt to these projects.

6 key points for a successful financing

The flow diagram in the middle of this guide provides an overview for prospective developers on the key points that they may wish to consider when deciding how to progress the financing of a renewable energy project. However, please note that this flow diagram is not intended to be an exhaustive checklist of all activities necessary to arrange financing. It is important to remember the following points.

6.1 **CONSIDER THE NEED FOR EXTERNAL RESOURCES/ADVICE**

It is recommended that a developer planning a renewables project seeks professional advice at an early stage to determine how to structure the project and arrange the financing. The key advisers are financial and legal advisers and, depending on the developer's own level of technical expertise, technical consultants. It is important that the various advisers work as a team.

While a developer may be reluctant to incur significant up-front costs when unsure if a project will proceed, a project that does not have the initial building blocks in place at the right time and in the right sequence has, in practice, little realistic chance of success.

Experienced advisers can provide a developer with the necessary strategic advice on the major actions that must be taken in relation to structuring the contractual arrangements and arranging the financing. Often, in the early stages of a project, advisers (in particular, financial advisers) will work largely on a **contingency basis** (ie, no project, no - or a very much reduced - fee). Hence, the initial costs to a developer may be relatively modest; if a project does proceed, the higher costs associated with advisers will be more than recovered, and it will be money well spent. Note, however, that even at the early stages the lenders and advisers will require all their external legal and consulting costs to be paid by the developer. These costs can sometimes be controlled by requesting the lenders to negotiate "caps" on these costs.

A list of financial advisers is available to prospective developers on request from the New & Renewable Energy Enquiries Bureau at ETSU (see Section 8 for contact details).

6.2 **VERIFICATION OF AVAILABLE RESOURCE**

Lenders will wish to see evidence that sufficient fuel supplies are available for a period exceeding that of the financing. For a waste disposal or biomass project, this means a long-term dedicated supply contract. For wind, at least one year of on-site measurements are usually required with results well correlated to local historical data from the regional Meteorological Office. For hydro, accurate water flow analysis is important; generally a developer should have at least 6-12 months of flow data at or near the site, which is then well correlated to 10 years of rainfall data from the Meteorological Office and to flow data from an Environment Agency down-river gauging station.

6.3 CAREFUL STRUCTURING OF THE CONTRACTUAL ARRANGEMENTS

Rigorous conceptual analysis and planning must go into the structuring of the contractual arrangements. At the conception stage, the developer (and relevant legal, financial and technical advisers) should analyse all the project risks and develop a plan as to how these risks will be apportioned.

Obtaining an off-take sales contract (often the power purchase agreement) may be a pre-requisite for the project to be economic.

The principal agreements that developers should focus on include:

- Engineering, procurement & construction contract.
- Power purchase agreement.
- Fuel/waste supply agreement (if applicable).
- Operating and maintenance agreement.
- Site agreements (lease etc).
- Shareholder/joint venture agreement.

The lenders will require that the principal contractual partners have a **strong track record** in their respective disciplines. In particular, lenders will want to see experienced construction contractors, suppliers with proven equipment, and experienced operators. Lenders will take considerable comfort from the level of experience, expertise and track record of the developer. Project lenders are typically sceptical when confronted with a project sponsored by an inexperienced, undercapitalised developer.

The **term** of the contracts should exceed the period over which the project debt will be repaid **plus a reasonable margin** to cover unforeseen events.

6.4 EARLY ATTENTION TO PLANNING AND CONSENTS

Many soundly conceived projects fall down because of problems related to planning, permits and consents etc. A checklist should be prepared of all the permits and consents necessary for the development and a plan developed as to how these permits and consents will be obtained.

If appropriate, an external planning consultant should be retained to provide advice.

6.5 APPROACH TO LENDING INSTITUTIONS

If the decision is made to use project finance (as opposed to on balance sheet financing), a developer, in conjunction with its financial adviser, should carefully select the lending institutions it will approach to provide the financing.

Key points to bear in mind will include the following:

- The local branch of the bank will **not** usually be equipped to deal with a project financing or anything other than a small transaction (say, less than £1-2 million). While local banking

connections should not be ignored entirely, it is important to make contact with the **specialist energy financing group in the head office** to ensure that the right attention is given to the financing.

- While preliminary discussions with banks are appropriate to “warm them up” for an upcoming transaction, **a formal approach to request financing commitments too early in the process can be counter-productive**. Lenders, generally, are not set up to work closely with a developer over the weeks and months whilst a project’s development is coming together. Lenders can quickly lose patience and interest, and are often not sympathetic to the many twists and turns that a project can go through during the development phase. A project can easily lose credibility with lenders through an approach that is too early.

The best time to approach the lenders to request a formal commitment is when the contractual arrangements have been **substantially negotiated** (but not finalised) and the major development milestones have been met.

- Lenders do not have the **in-house** expertise to assess the technical aspects of a project; as a result, they will require an **independent technical report prepared by a credible consultant**. Generally, lenders will commission their own study, but it may be possible to retain an independent consultant to advise **both** the developer and the banks if the banks are happy with the consultant’s independence and the terms of reference by which the consultant is retained.
- **It is important to maintain competition among prospective lenders**. If a lender knows that s/he is in a “sole source” position in relation to providing the financing, s/he will understandably drive a harder bargain than if in competition with other lenders. The optimal number of institutions initially bidding to provide the financing is three to five, depending on the size of the financing. This list can then be reduced to two or possibly three for serious discussions and negotiations after the bids have been received. Before a bank is formally selected, as many as possible of the detailed terms and conditions of the lending proposal should be agreed in writing and the bank should have been provided with and have “signed off” on the major contracts. While, inevitably, there will be subsequent changes to the contracts, it is important that the initial risk allocation does not change in a material way after a bank has been selected. Changing the risk allocation at this stage will weaken the developer’s position and cause unnecessary delays.
- **Provide clear and comprehensive information**. The business plan or “information memorandum” produced by the developer (and their financial adviser) should be a clear and complete document that gives a prospective lender a full picture of the project, the contractual structure and the proposed financing. This is a key document which should be thoroughly prepared, as it is the principal means of attracting the lenders’ interest in the project. Its contents are discussed below.

6.6 INFORMATION MEMORANDUM

An information memorandum should include the following:

6.6.1 PROJECT SUMMARY

The project summary should be designed to attract the reader and encourage reading of the more detailed sections of the Information Memorandum. Remember that this may be just one of several Information Memoranda received by the reader that day. The summary should be one or two pages in length and include a very brief history of the project, a list of the major parties involved, and state the location, technology used, output (MW) and total costs.

6.6.2 OVERVIEW OF FINANCING PLAN, SOURCES AND USES OF FUNDS

A description of the overall financing plan should be given, including "use of funds" covering breakdown of the cost of the plant hardware, construction costs, development costs, external fees (lawyers, financial advisers etc), and interest costs during construction. Under "sources of funds", the planned debt, equity contributions and other funds such as subordinated debt or grants should be listed.

6.6.3 TERM SHEET

This section should explain the financing as the developer (and advisers) expect the loan to be structured. It should be noted that the lenders may not necessarily follow this plan, and it is likely to be subject to some negotiation. The minimum details which should be included are the amount to be borrowed, the time over which borrowing will occur to fund construction (the drawdown period), the loan repayments and the interest rate (a conservative rate should be used to assure the lender that there are sufficient funds in the project to repay the debt). As lenders tend to distinguish between the construction loan (drawdown period) and term loan (repayment period), interest rates may be different in each period. Further details should also be included stating key coverage ratios, covenants and default conditions.

6.6.4 DESCRIPTION OF DEVELOPMENT PLAN

The project should be described in sufficient detail to enable the lender to make a judgement about pursuing the loan. The development plan and schedule should cover the technology, environmental issues, construction details, operation, site attributes, permits and licences, resource availability, electricity interconnection, fuel supply, waste disposal etc.

6.6.5 DESCRIPTION OF THE PRINCIPAL CONTRACTING PARTIES

This should state how the parties are related and what their roles will be. Brief financial statements on each party should be included.

6.6.6 SUMMARY OF MAJOR PROJECT CONTRACTS

This summary, normally produced by the developer's legal adviser, should outline the highlights of each major contract. Before making a commitment the lenders may wish to review the actual contracts. As lenders often require changes, it is important that the contracts are well developed, but not finalised, when prospective lenders are approached.

6.6.7 SUMMARY OF PRINCIPAL LICENCES AND PERMITS

This section should list all the permits which will be needed for the construction and operation of the project. A status report on each licence and permit should be provided, indicating those obtained (with conditions) and the expected timing for approval for those yet to be obtained.

6.6.8 SUMMARY OF RISKS

The developer should review what are considered to be the principal risks in the project and describe how these risks have been mitigated. The issues to be addressed include the following:

- Is the contractor bearing all the completion risk, including cost overrun risk?
- Is there an experienced operator?
- Has the contractor provided a completion bond or is the contractor sufficiently strong for it not to be required?
- Can the project withstand increases in interest rates?
- Is there a secure, long-term market for the project output?
- Is this a new technology? Are there similar plants operating elsewhere and at what availability and capacity?
- How is the project protected from defects in the technology?

6.6.9 FINANCING EVALUATION

Part of the lender's review will be an evaluation of the cash flow projections. The lender will consider the project's sensitivity to changing external and internal factors to test its resistance. Several ratios will be closely examined. One such key ratio will be the annual debt service coverage ratio. Sufficient coverage (often at least 1.5 times) is critical. This type of measure of "available cash" compared with debt service is more important to the lender than shareholders'

returns, as a healthy ratio signals a higher likelihood that the loan will be repaid. This is always the lender's main concern and hence the evaluation should aim to illustrate how the project will repay its debt under a variety of scenarios.

6.7 FINANCIAL ANALYSIS AND MODELLING

As would be expected, lenders pay close attention to project economics; hence, a clear, comprehensive and accurate **project model** (that shows not only project or shareholder returns, but also lender coverage ratios) is a very important element of the information package to be provided to the lenders. Much care should be given to developing the model and ensuring its integrity with the contractual arrangements.

The financial model should focus on **project cash flow**. The assumptions should be conservative, in particular in all dealings with lenders, and the sensitivity analysis should demonstrate the viability of the project and the financing structure (ie debt service coverage ratios) under a range of scenarios. Financial advisers are often employed to produce financial models, advise developers on the typical sensitivity analysis that lenders will require, and the kind of debt service coverage ratios that lenders will expect under the various scenarios.

[An example of the format of a typical project model is shown opposite. Please note that the figures used are not indicative of current conditions; they are only intended to show the details of the model.]

6.8 "PROJECT MANAGEMENT" OF THE DEVELOPMENT PROCESS

A developer should maintain and update regularly **a checklist** of the outstanding items and issues that must be resolved on a project, together with a plan of how to make progress on each outstanding item. Developing a renewable energy project requires **project management skills** and the development should be approached in the same manner as any complex project management task. The discipline of a regular review by a "steering committee" of key members of the development team to update the checklist is a useful mechanism to identify problems early on, when there is still time to activate and complete **contingency plans**.

The process leading up to "financial close" is often very hectic, and a clear and complete checklist is an invaluable tool to control the process and to ensure all issues are being dealt with properly. Financial close will only occur once all agreements are in place to the satisfaction of the lenders.

WASTE UNLIMITED		BASE CASE CASH FLOW PAGE 1							
ASSUMPTIONS		TOTAL PROJECT COSTS (£ MILLION)							
Commissioning date	January 1995	Development costs	£0.700	2.8%					
Pool price 1995 (p/kWh)	2.50	Engineering	£0.400	1.6%					
NFFO Electricity price (p/kWh)	4.50	Site & planning	£1.000	3.9%					
Corporation tax rate	33%	Plant & equipment	£18.000	70.9%					
Tax effects are ignored where a net loss occurs		Grid connection	£0.300	1.2%					
Interest paid annually		Interest during construction	£2.300	9.1%					
Repayments made semi-annually		Financing expenses	£0.900	3.5%					
Only 1/2 of the contingency is borrowed		SUBTOTAL	£23.600	93.0%					
Loan repayment period	14 years	Contingency 7.50% of subtotal	£1.770	7.0%					
Plant life	20 years	TOTAL PROJECT COSTS	£25.370	100.0%					
Depreciation policy	Straight line basis	FINANCING STRUCTURE (£ million)							
Gate fee (£/tonne)	£27.00	Equity 1	£3.000	11.8%					
Annual throughput (tonnes/year)	100,000	Equity 2	£4.500	17.7%					
Construction period	2 years	Total equity	£7.500	29.6%					
NFFO Contract length	15 years	Debt	£17.870	70.4%					
TOTAL BORROWING (£ million)		TOTAL FINANCING	£25.370	100.0%					
Loan available	£17.870								
Less 1/2 contingency	£0.885								
TOTAL BORROWING	£16.985								
Year number	1	2	3	4	5	6	7	8	9
Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Generating capacity (MW)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Maximum total hours	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760
Availability	85%	85%	85%	85%	85%	85%	85%	85%	85%
Planned operating hours	7,446	7,446	7,446	7,446	7,446	7,446	7,446	7,446	7,446
MWh Generated	52,122	52,122	52,122	52,122	52,122	52,122	52,122	52,122	52,122
Base interest rate	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Lender's margin	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
All-in interest rate	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%
Inflation	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
NFFO price (p/kWh)	4.5	4.73	4.96	5.21	5.47	5.74	6.03	6.33	6.65
Pool price (p/kWh)	2.50	2.63	2.76	2.89	3.04	3.18	3.34	3.51	3.68

WASTE UNLIMITED		BASE CASE CASH FLOW PAGE 2								
ANNUAL PROFIT & LOSS STATEMENT (£ million)		1995	1996	1997	1998	1999	2000	2001	2002	2003
Revenue										
Electricity Sales	2.345	2.463	2.586	2.715	2.851	2.994	3.143	3.300	3.465	
Gate Fees	2.700	2.835	2.977	3.126	3.282	3.446	3.618	3.799	3.989	
Total	5.045	5.298	5.563	5.841	6.133	6.439	6.761	7.100	7.454	
Expenses										
Operating Costs	1.700	1.785	1.874	1.968	2.066	2.170	2.278	2.392	2.512	
Depreciation	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	
Operating Profit (Loss)	2.445	2.613	2.788	2.973	3.166	3.370	3.583	3.807	4.043	
Interest expense	1.758	1.700	1.630	1.555	1.468	1.366	1.254	1.132	1.003	
Profit before tax	0.687	0.913	1.158	1.418	1.699	2.004	2.330	2.675	3.040	
Estimated tax	0.227	0.301	0.382	0.468	0.561	0.661	0.769	0.883	1.003	
Profit after tax	0.460	0.612	0.776	0.950	1.138	1.342	1.561	1.792	2.037	
CASH FLOW STATEMENT										
Operating profit (loss)	2.445	2.613	2.788	2.973	3.166	3.370	3.583	3.807	4.043	
Add back depreciation	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	
Operating cash flow	3.345	3.513	3.688	3.873	4.066	4.270	4.483	4.707	4.943	
Less tax payments	0.227	0.301	0.382	0.468	0.561	0.661	0.769	0.883	1.003	
Cash flow pre-financing	3.119	3.211	3.306	3.405	3.506	3.609	3.715	3.825	3.940	
Less interest	1.778	1.700	1.630	1.555	1.468	1.366	1.254	1.132	1.003	
Less debt repayments	0.476	0.645	0.679	0.747	0.917	1.019	1.121	1.189	1.274	
Net cash flow	0.885	0.866	0.997	1.103	1.121	1.223	1.340	1.503	1.663	
DEBT SERVICE										
Debt at beginning of year	£16.985	£16.509	£15.864	£15.185	£14.437	£13.520	£12.501	£11.380	£10.191	
Repayment as % of total debt	2.8%	3.8%	4.0%	4.4%	5.4%	6.0%	6.6%	7.0%	7.5%	
Repayment	£0.476	£0.645	£0.679	£0.747	£0.917	£1.019	£1.121	£1.189	£1.274	
Debt at end of year	£16.509	£15.864	£15.185	£14.437	£13.520	£12.501	£11.380	£10.191	£8.917	
Interest expense	£1.758	£1.700	£1.630	£1.555	£1.468	£1.366	£1.254	£1.132	£1.003	
Total debt service	£2.234	£2.345	£2.309	£2.302	£2.385	£2.385	£2.375	£2.321	£2.277	
ANNUAL DEBT SERVICE COVERAGE RATIOS										
Operating cash flow (pre-tax) / Total debt service			[Average ratio over loan term = 2.02]							
	1.50	1.50	1.60	1.68	1.71	1.79	1.89	2.03	2.17	
Cash flow pre-financing (after tax) / Total debt service			[Average ratio over loan term = 1.64]							
	1.40	1.37	1.43	1.48	1.47	1.51	1.56	1.65	1.73	

7

timetable

As a general rule, the time necessary to raise finance is greatly underestimated by developers who are inexperienced in the financing process.

7.1 PROJECT DEVELOPMENT PHASE

The time-consuming part of the development process is usually up to the point that the project (including negotiation of all the contracts) is in a sufficiently advanced state to begin serious discussions with lenders - ie the project development phase. This can take anything **from a minimum of about four months to as long as two years** depending upon the complexity of the transaction and the ease with which the developer can negotiate the important agreements and obtain the necessary planning consents, permits etc.

The following table provides a rough estimate of the time necessary to complete the typical tasks in the "development phase" (ie the period leading up to the issuing of the business plan/information memorandum and the commencement of the "financing phase"), assuming a relatively smooth, problem-free process.

TASK	TIMING
Conceptual structuring (technology, site, fuel/waste sources etc)	3-6 months
Application for/negotiation of Power Purchase Agreement	Varies considerably depending on type of contract, but will probably cover a 12-18 month period.
Contract structuring and negotiation of heads of term	6-12 months
Obtain principal permits	3-9 months

For many projects, obtaining a Power Purchase Agreement will be a critical-path item. However, much of the development-phase work will need to be well advanced before a contract is agreed.

7.2 PROJECT FINANCING PHASE

From the time of issue of the information memorandum (ie from the time of completion of substantial work on the contract negotiations), it is possible to be somewhat more precise about the timing, although the process can still often encounter significant delays.

The following are reasonable targets:

TASK	TIMING
Issue of information memorandum to lenders	month 0
Receipt of offers of finance from lenders	months 1-2
Analyse offers and negotiate financing terms	months 3-4
Finalise contractual arrangements	months 4-6
Negotiate loan documentation	months 4-6
Financial close	month 7

The above timetable should be viewed as ambitious and many projects would take considerably longer, in particular if the approach to the lenders is not handled in a professional, well planned and well structured fashion. It is not uncommon for the above period to extend from six to twelve months; however, this is often a sign that the underlying commercial contracts may not have been developed with the needs of the lenders sufficiently in mind. An experienced financial adviser can ensure that the time necessary to arrange the financing and achieve financial close can be minimised.



conclusion

This guide has attempted to provide a summary of the approach a developer could follow when trying to raise finance for a renewable energy project. Financing any project is time-consuming and complex, whether the project is developed on balance sheet or via limited recourse project financing. Developers must have dedication and stamina, and the will to overcome problems and setbacks.

The developer must consider the method of financing early in the project development process, drawing, where necessary, on professional financial and legal advice. This guide gives practical advice on the financing alternatives, defines some of the financial terminology and describes the sources of finance available to a developer. It also provides a number of pointers to developers on how to achieve a successful financing. It is hoped that it will assist developers in that task.

This report is only a summary of the approach developers could follow to obtain finance for their projects, and is an introduction to a complex subject. Further information, including a more detailed study and report on limited recourse project financing techniques for renewable energy projects, is available from the New & Renewable Energy Enquiries Bureau at ETSU at the address below:

New & Renewable Energy Enquiries Bureau

ETSU

Harwell

Didcot

Oxfordshire

OX11 0RA

Tel. 01235 432450

Fax: 01235 433066

E-mail: NRE-enquires@eat.co.uk

