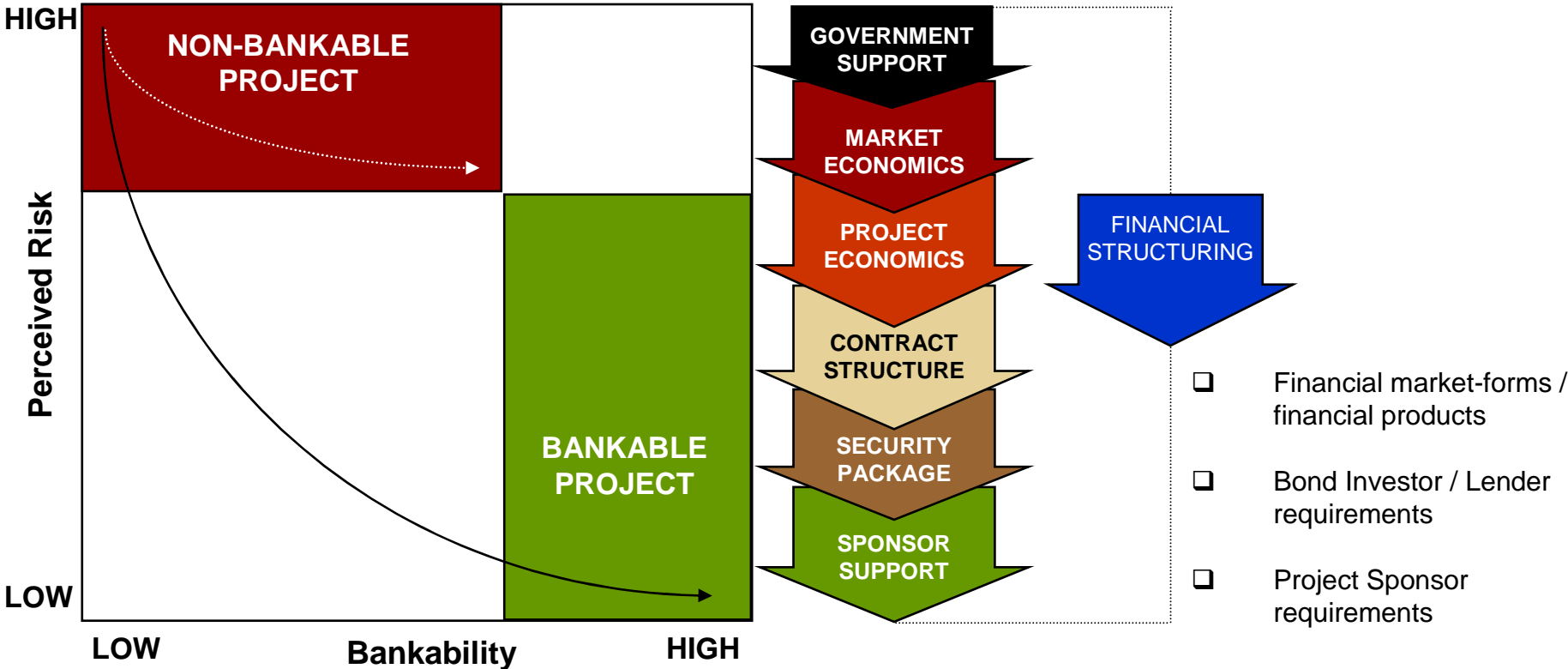
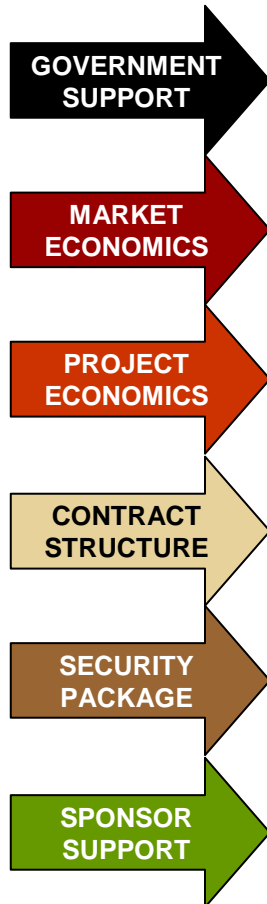


CAPACITY BUILDING
TO DEVELOP
BANKABLE ENERGY EFFICIENCY
PROJECTS

The General Project Finance Feasibility Matrix



Energy Efficiency and Renewables: Main Banking Risks



- Acceptable country risk?
 - Regulatory framework for energy savings and IPP's bankable?
 - Carbon credits possible? What scheme to support efficiency and renewables?
- Electricity shortages? Base load opportunity? Supportive industry?
 - Specific sources (such as hydro) available that make other RES less-bankable?
 - How does specific efficiency project compare to other projects?
- Technology to be used, efficiencies and track record of equipment? Costs per MW?
 - Use of carbon credits and subsidies from support schemes?
 - Financing options?
- Long term PPA possible with validity exceeding longest debt tenor?
 - Turnkey contractor under fixed price date certain contract?
 - Reputable O&M contractor?
- Product warranties?
 - Comprehensive risk coverage available from equipment vendors?
 - Mortgage possible on land or other assets?
- Reputable and experienced sponsor?
 - Level of equity investment?
 - Level of contingent equity available for completion?

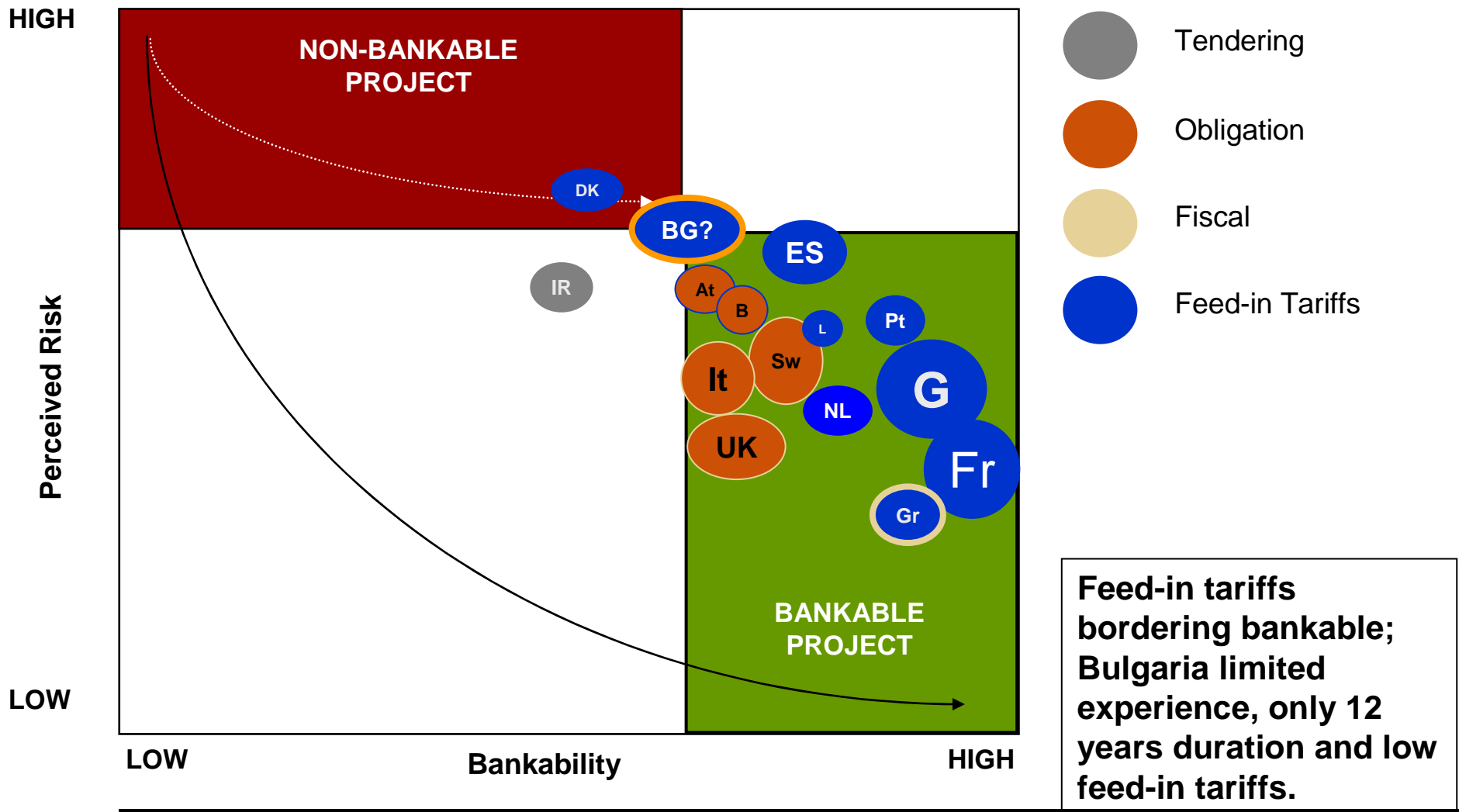
Energy Efficiency and Renewable Energy Sup

A black arrow pointing downwards, containing the text "GOVERNMENT SUPPORT" in white, uppercase letters.

GOVERNMENT
SUPPORT

- Legal and institutional framework for energy efficiency and renewable energy.
- Availability of financial infrastructure and fiscal mechanisms to allow investments in efficiency/renewables projects.
- Kyoto Protocol and/or mechanisms to provide incentives or requirements for support to the implementation of efficiency/renewable project.
- Clear legal regime for contracting, land ownership, taxation, licensing, permitting, connection.

Renewables and Government Support



Energy Efficiency and Renewable Situation

- Significant potential for energy efficiency in industry and buildings.
- Varying potential for renewable energy country by country.
- By its nature and available potential wind/solar/hydro power will not provide a secure base load electricity supply.
- It is unclear whether feed-in tariffs imply that carbon credits accrue to Government.
- Licenses for windparks/solar have been awarded. Only a negligible number of MWs are installed nowadays.
- Limited installed capacity and few energy efficiency projects also indicate a supporting industry with limited experience.
- Limited installed capacity also indicates limited experience with offtake of unsecure power generation.
- Limited installed capacity also indicates a supporting financial sector with limited exposure and experience.

The Main Issues in Project Economics



PROJECT
ECONOMICS

- Verifiable feasibility studies, confirming the availability of renewable resource or savings.
- Strong track record and/or guaranteed performance of the equipment.
- Cost of technology/equipment, which allows economic generation/savings given the price of energy or incentives (cost per kWh).
- Sufficient level of price of energy or tariff to provide comfortable Returns on Equity and Debt Service Coverage Ratios.

Contractual Situation



CONTRACT
STRUCTURE

- Build, *operate* and/or transfer concession models faced quite strong legal problems.
- Connection to the electricity networks faces a lot of challenges and obstacles.
- The construction and equipment contracts are not likely to be signed with one party.
- A power purchase agreements are difficult to be applied in liberalised electricity markets.
- The contractual regime for ESCO, or third party finance, does not always allow the savings to be realised and properly attributed to the relevant party.
- Need for enforceable PPA, Turn-key contracts, Supply contracts, O&M and Connection contract.

Lenders' Security Issues



SECURITY
PACKAGE

- Lenders do not assume completion risks. These risks are allocated with EPC contractors (through retention of construction contract payments and liquidated damages on performance) and with equity providers (through contingent equity for cost overruns).
- For example, wind turbine manufacturers provide for a 5 to 10 year product warranty including a defects liability period as from commissioning. A supplier of technology to renewable or energy efficiency project with longer repayment period should be able to provide product warranties on its balance sheet.
- The legal regime should allow the land to be owned by the sponsor and used as a security.
- The suppliers of equipment should be able to attract comprehensive cover for the benefit of potential lenders (Export Credit Agency's cover). Without such coverage it is very unlikely to tap the commercial banks market.

Equity Considerations



SPONSOR
SUPPORT

- Banks would like to see a reputable sponsor in a transaction.
- The practice shows that 25% to 40% of project cost might be required in equity which depends on uncertainties related to the project.
- Contingent equity requirements in general amount to some 30% to 40% of the equity in a project. Such element needs to be addressed in the project's funding plan.
- Lower percentages of equity are generally only possible through lease schemes. These schemes require a counterparty purchasing the equipment at the end of the lease period.
- Using of mezzanine debt instruments usually alleviates this issue.

Bankability



FINANCIAL
STRUCTURING

Many uncertainties accompany a project.

The project will only attract sufficient finance if to a large extent:

1. Uncertainties are reduced
2. Risks are mitigated

What the banks often actually face



FINANCIAL
STRUCTURING

Main issues:

- complicated regime for support of renewables;
- unclear legal regime;
- opposition from local energy companies;
- contractual and implementation issues;
- inexperienced developers

As a result:

- few and incomplete applications
- small, and often non-bankable projects

Bankability: Uncertainty Reduction



	Uncertainties	Capacity Building
Government Support	Working of RES framework Level of feed-in tariffs next years	Support to establish/implement Support to review/analyse
Market Economics	Carbon credits Industry support	Incorporate in Business Plan Facilitate information exchange
Project Economics	Cost per kWh O&M cost per kWh	Comparative analysis in BP Comparative analysis in BP
Contract Structure	Legal structure of venture Status PPA Separate O&M contract	Assistance to Sponsor Assistance to Sponsor Assistance to Sponsor/EPC
Security Package	Ownership Availability comprehensive cover	Assistance to Sponsor Assistance to Sponsor / ECAs
Sponsor Support	Availability (contingent) equity	Assistance to Sponsor / Fund

Bankability: Risk Mitigation



	Risks	Risk Mitigation
Government Support	Legal framework	Comprehensive insurance cover
Market Economics	Place renewable energy in loadcurve Lack of experience	Legal opinions on working supportive legislation Higher contingencies
Project Economics	Equipment supplier's reputation	Higher contingencies / product warranties
Contract Structure	Not one EPC contractor Creditworthiness offtaker	Other similar arrangements Debt service reserve levels
Security Package	Completion Product warranties	Sponsor and contractor support Insurance
Sponsor Support	Inexperienced sponsor	Attract experienced co-sponsor?

Financing of Energy Efficiency and Renewable

**FINANCIAL
STRUCTURING**

Dependent on how uncertainties are addressed and risks are allocated / mitigated different types of financial structures might be assessed:

		Debt Product	
Borrower	Project Company	Loan Structure	Lease Structure
	Corporate	Loan Structure	Lease Structure

Conventional Project Finance



FINANCIAL
STRUCTURING

Project finance is the most likely route for financing of the renewables.

The following table summarizes the options*:

Debt Product		Commercial Banks + ECA's	Development Banks
Project Company	Loan Structure		
	Senior Debt Availability Pricing	Yes (depends on equipment) 12% - 15% upfront + CIRR*	Yes Libor + 4.5% - 6%
	Subordinated Debt Availability Pricing	No -----	Yes Libor + 6% minimum

1. Commercial banks are only likely interested in case they can obtain comprehensive cover from an Export Credit Agency (ECA). Such ECA charges an upfront premium and commercial banks charge a so-called CIRR rate thereafter per annum. This rate is currently around 5.5%. Subordinated debt – functioning as equity - is not likely to be obtained through commercial banks.
2. In the present market situation development banks and specialised funds are the most relevant option. These banks will likely mobilize local banks to some extent. Subordinated debt might be available.

* Availability and level of pricing are for indicative purposes only. There will be associated fees and costs payable.

Conventional Corporate Borrowing

Corporate borrowing is an option in financing energy efficiency projects in large companies. Such financing route makes only sense if the borrower is of such credit quality that it will beat project finance on margins substantially and the borrower has a balance sheet that can bear the risks related to the projects. The following table summarizes the options*:

Debt Product		Commercial Banks + ECA's	Development Banks
Corporate BEST	Loan Structure		
	Senior Debt Availability Pricing	Yes (depends on equipment) 12% - 15% upfront + CIRR*	Yes Libor + 3.5% - 5%
	Subordinated Debt Availability Pricing	No -----	Yes Libor + 5% minimum

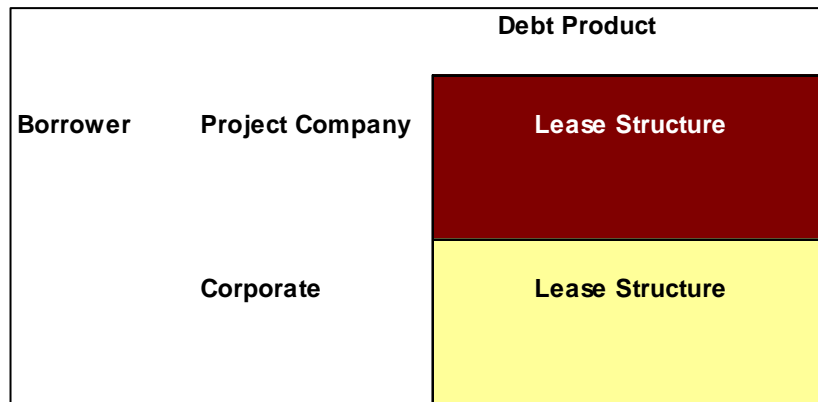
1. Commercial banks are only likely interested in case they can obtain comprehensive cover from an Export Credit Agency (ECA) under a *suppliers credit* (on Sponsor's balance sheet). Pricing much similar to the project finance option.
2. Development banks might be an option provided that the borrower is of good creditworthiness and that the facilities are only a certain percentage of its balance sheet (< 20%).

* Availability and level of pricing are for indicative purposes only. There will be associated fees and costs payable.

Lease Options



In some European countries lease schemes to finance renewables (windparks) are popular. Features of such schemes are: 1) generally a favourable depreciation scheme that allows playing around with economic (end)value of the assets and fiscal depreciation, 2) lessors willing to purchase the turbines after a number of years, and 3) creditworthy entities that act as counterparty. In the Netherlands for example accelerated depreciation was allowed for a number of years, turbines received a grant and government-owned public utilities acted as counterparties. This way windparks have been financed with virtually no equity investment.



In order to investigate possibilities of lease in the proposed windparks more details need to be known about depreciation and willingness of the purchaser to enter into a lease. Financial terms and conditions will be based on purchaser's creditworthiness.

Need for Capacity Building



**GOVERNMENT
SUPPORT**

- Capacity support to make the regulatory framework for energy savings and IPP's bankable?
- Capacity support to make Carbon credits possible?
- Capacity to implement scheme to support efficiency and renewables?



**MARKET
ECONOMICS**

- Capacity to prepare long term strategies integrating renewables and efficiency?
- Capacity in the financial institutions to appraise a renewable or efficiency project?
- Capacity in the local industry to offer equipment and services?



**PROJECT
ECONOMICS**

- Capacity to prepare and present viable business plan, including costs, revenues etc.?
- Capacity to request, finance, prepare, evaluate and verify feasibility studies?
- Capacity to consider different technical and financing options?

Need for Capacity Building



Capacity to prepare and negotiate PPA, Supply, Turn-key, O&M contracts?
Capacity to evaluate the technical and financial strength of a contractor?
Capacity to enforce a contract?



Capacity to build strong security package?
Capacity to arrange comprehensive risk coverage (ECAs, vendors)?
Capacity to arrange mortgage on land or other assets?



Capacity to have knowledgeable developers/sponsors?
Capacity to structure proper equity package?
Capacity to structure proper level of contingent equity available for completion?



CAPACITY TO STRUCTURE THE RIGHT FINANCIAL PACKAGE?

Need for Capacity Building

Needed:

Concerted efforts to build institutional capacity among:

- Governmental and municipal officials;
- Developers and;
- Investors

to utilise the existing potential for Energy Efficiency and Renewables through:

- Strengthening energy efficiency and renewables policies;
- Assisting developers and municipalities to identify, prepare and present viable investment grade proposals and;
- Promote opportunities to invest.

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