

DEVELOPMENT OF WATER
ENERGY EFFICIENCY
AND RENEWABLE ENERGY
BANKABLE PROJECTS

Istanbul
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Investment Potential

IMPROVING THE EFFICIENCY OF:

- Industry, Housing, District heating, Transport
- Electricity generation, transmission and use

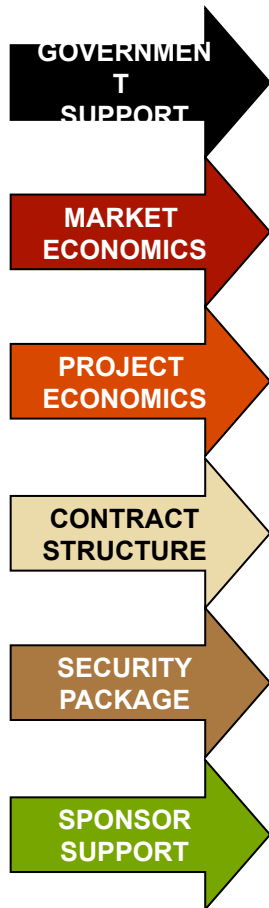
INVESTMENTS IN RENEWABLE ENERGY:

- Hydro, Wind, Biomass, Geothermal, Solar

INVESTMENTS IN WATER:

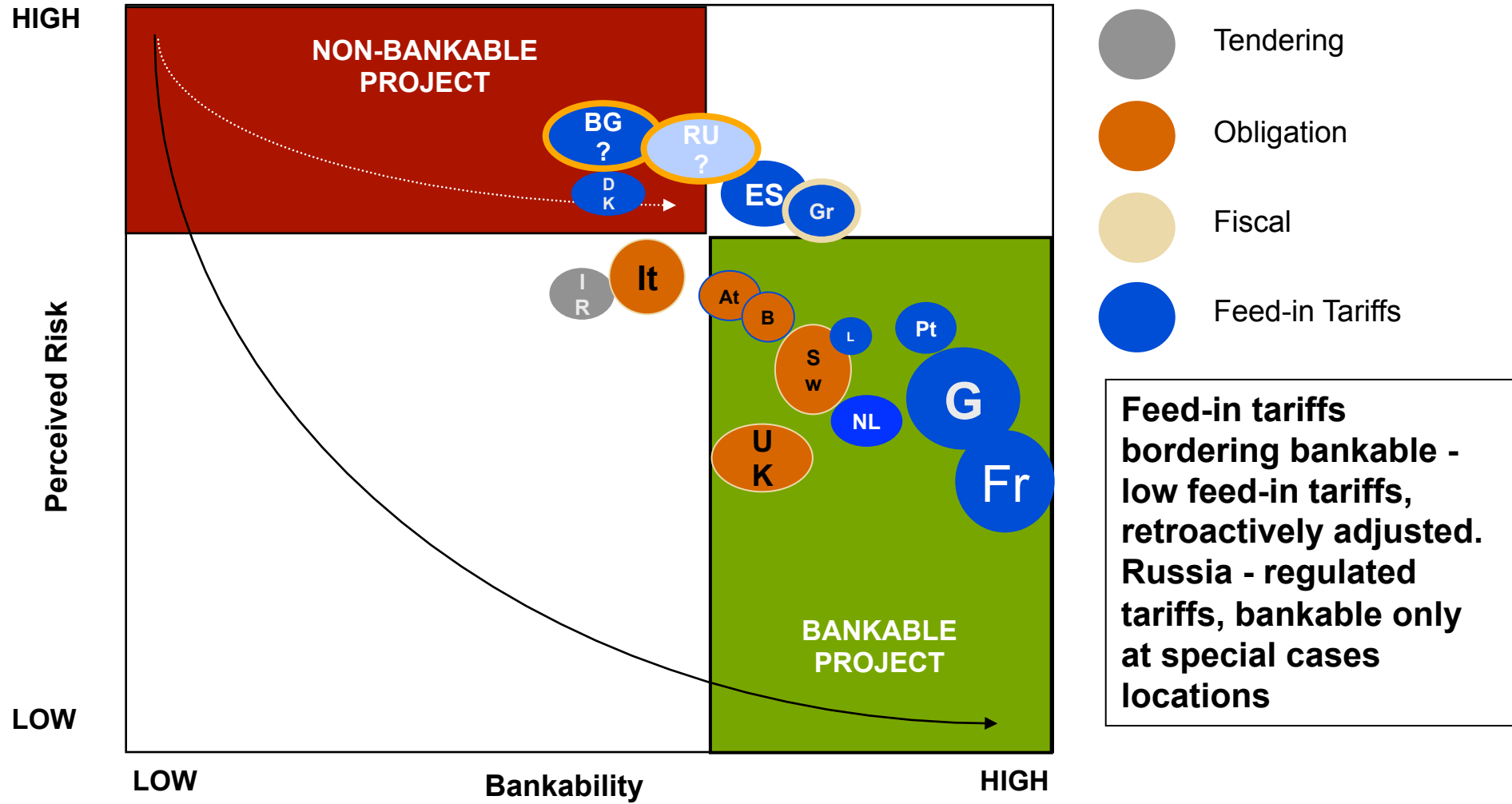
- Hydropower, Dams, Irrigation, Desalination, Water treatment

Main Investment Risks



- Acceptable country risk?
 - Regulatory framework for water, energy savings and IPP's bankable?
 - What scheme to support water use savings, efficiency and renewables?
- Water shortages? Metering and payment? Supportive industry?
 - Electricity shortages? Base load opportunity? Supportive industry?
 - Specific sources (such as hydro) available that make other RES less-bankable?
 - How does specific water or efficiency project compare to other projects?
 - Technology to be used, efficiencies and track record of equipment? Costs per unit?
 - Use of subsidies from support schemes?
 - Financing options?
- Long term WPA or 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?

Government Support



Energy Efficiency and Renewable Energy Sup

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

GOVERNMENT
SUPPORT

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

Water, Efficiency and Renewable Situation



MARKET
ECONOMICS

- Significant potential for energy efficiency in industry and buildings.
- Large needs in some countries of clean water and/or water treatment.
- 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.
- By its nature clean water supply is perceived as a basic need and tariffs are heavily subsidised.
- Licenses for water supply have been awarded. Only a negligible number of private projects are implemented.
- Limited installed capacity and few projects also indicate a supporting industry with limited experience.
- Limited installed capacity also indicates limited experience with offtake and payment mechanisms.
- 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 resource or savings.
- Strong track record and/or guaranteed performance of the equipment.
- Cost of technology/equipment, which allows economic water supply, generation/ savings given the price of water, energy or incentives (cost per unit).
- Sufficient level of price of water, 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 water/electricity networks faces a lot of challenges and obstacles.
- The construction and equipment contracts are not likely to be signed with one party.
- A water/power purchase agreements are difficult to be applied in liberalised water or 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 WPA, 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 water or renewables;
- unclear legal regime;
- opposition from local water or energy companies;
- contractual and implementation issues;
- inexperienced developers

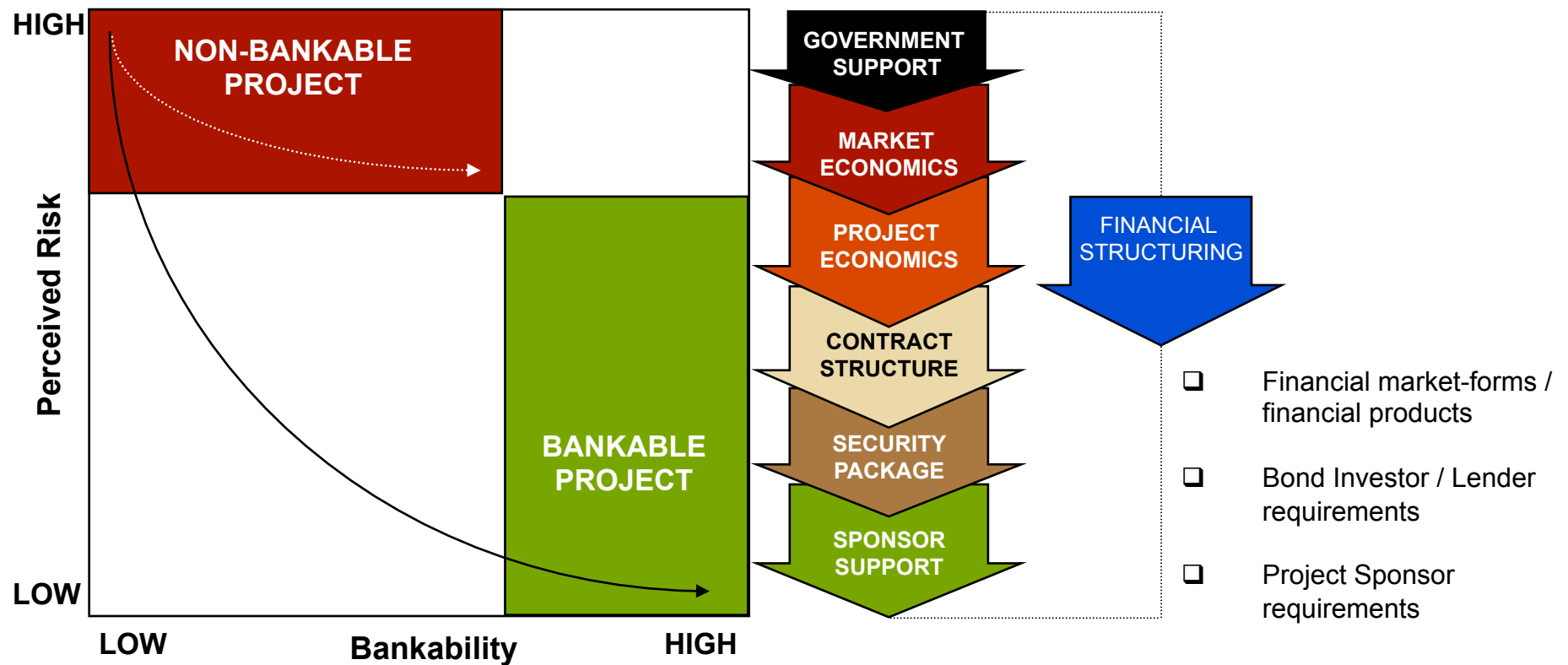
and ...

- Incomplete and badly presented proposals and business plans

As a result:

- few and incomplete applications
 - small, and often non-bankable projects
 - or too big and also non-bankable projects
-

The General Project Finance Feasibility Matrix



Need for Capacity Building



- Capacity support to make the regulatory framework for water, savings and IPP's bankable?
- Capacity support to make private investment in water sector possible?
- Capacity to implement scheme to support water, efficiency and renewables?



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



- 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 WPA, 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 assistance to develop bankable projects

Needed:

Concerted efforts to build institutional capacity among:

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

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

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

Financing Energy Efficiency and Renewables

One of the main issues - lack of bankable projects prepared in accordance with the requirements of the IFI's

EC and EBRD sponsored Guide for Preparation of Bankable Proposals (1996) and a Training Programme to assist specialists in the field to prepare and present their projects

UN ECE launched Energy Efficiency Investment Project Development for Climate Change Mitigation (1999-2013) to:

- (a) develop the skills of the private and public sectors at the local level to identify, develop and implement energy efficiency investment projects;
- (b) provide assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support investment projects; and
- (c) provide opportunities for the commercial banks and companies to invest in these projects through existing investment funds, or if warranted, through a new fund, assisted by commercial banks in the region.

Why a Proper Business Plan/Information Memorandum is necessary

- Accelerates the approval process and increases the chances for approval of your proposal
- Standard and comprehensive presentation of your projects, giving your potential financiers opportunity to make an easy evaluation of your proposal's commercial value and environmental benefits.
- Not every great idea becomes a good project
- Helps the project sponsor to analyse and value its own risks and commitments and compare them with the expected benefits, in order to evaluate its worthiness.
- Creates local expertise and commitment
- Business plan preparation is a valuable and transferable skill, applicable to the commercial and economic activities of many organisations and companies. Efforts spent on analysing and evaluating a project's risks and benefits create stronger commitments and reduce the risks associated with its implementation.

What is a Proper Business Plan

A detailed and comprehensive analysis and description of the technical, environmental, social, economic and financial aspects of a project. A Business Plan is a structured presentation to decision makers facilitating them in determining a project's viability.

Business Plan Structure

Nature of the Business

Strengths of the Business, Risks, Current Situation, Future Plans

Nature of the Project

Background to the Project, Scope of the Project, Rationale for the Project,

Benefits

Savings and environmental improvements, Export promotion, Import substitution, Job creation, Technology transfer, Management development

The Sponsors

Background, Financial data, Proposed Financial Contributions and Exposures, Rationale for Involvement of Other Partners,

Energy Audit, Feasibility studies

Project Costs and Timescale

Project costs, Energy and raw materials consumption, Basis for the cost estimate, Timetable of Implementation and Disbursements,

Procurement Issues

Products Services and Markets

Description of products or services, Pricing and Costs, Market Description, Competitor's analysis, Financial Position of Buyers

Regulations and Environment Information

Key permit requirements and regulations required from the authorities, Environmental regulations, Status of public consultation

Role of the bank, Description of the role of the bank or of the financier

The Financing Plan, Current and Required Sources of Finance, Type of Financing Required

Cash Flow Projections

Deriving Cash-flows from Raw Data, Working Capital, Taxation, Operating Profit, Free cash-flow, Servicing of Finance, Ratios

Pro-Forma Financial Statements

Forecasted Income Statement, Forecasted Balance Sheet, Assets, Liabilities, Forecasted Cash Flow, Forecasted Ratios

Checklist of supporting documents typically required as appendices to a Project Agreement

- .Project description and specification
- .Necessary licenses, permits and approvals
- .Description of and rights of way for the project
- .Preliminary design criteria
- .Procedures for government to approve the project's company's proposal for design changes
- .Procedures for government to request design changes and additional work
- .Energy Audit by independent auditor
- .Feasibility studies by independent consultants
- .Environmental impact assessment and environmental management system
- .Quality management system
- .Safety certification system
- .Programme and procedures for testing
- .Project operation parameters
- .Operation and maintenance criteria
- .Tariff or toll rates and tariff or toll revision formulae
- .Specifications for tariff or toll collection system
- .Training programme
- .List of initial shareholders and percentage interests
- .Insurance agreements
- .List of pre-approved contracts
- .Rights and obligations of the parties upon termination
- .Form of bonds
- .Form of guarantees
- .Overseeing and monitoring rights of the government
- .Form of legal opinion of counsel for project company
- .Form of legal opinion of counsel for government (various relevant ministries)

Formats for bankable proposals developed by RFI

- Guide for development of bankable proposals in cooperation with EC, EBRD and UNECE, translated in Russian, Bulgarian and Turkish. The Guide provides a comprehensive description and guidance on completing a business plan/information memorandum meeting the requirements of the international financial institutions.
- Form for completion of bankable proposals. The Form provides an easy format for completion of a business plan.
- Simplified financial model

These are made available to the participants, with the requirement that the respective copyrights and disclaimers are observed

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