# DEVELOPMENT OF ENERGY EFFICIENCY AND RENEWABLE ENERGY BANKABLE PROJECTS

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# Investment Potential in North Macedonia

**IMPROVING THE EFFICIENCY OF:**

- Industry
- Housing
- Electricity generation and use

**INVESTMENTS IN RENEWABLE ENERGY:**

- Biomass
- Solar

# Financing Energy and Renewable Energy

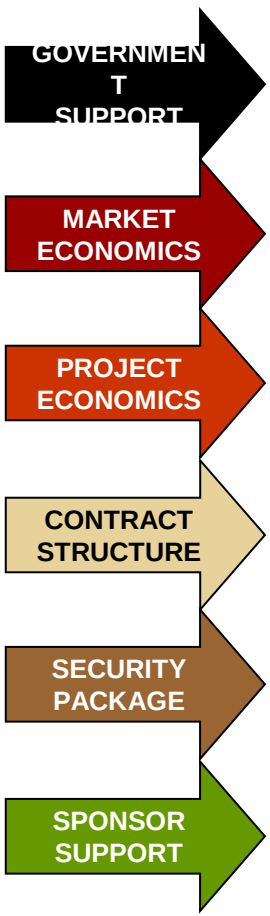
One of the main issues - lack of bankable projects prepared in accordance with the requirements of the Financial Institutions

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

- UNECE is implementing project “Improving national capacity on renewable energy (RE) and energy efficiency (EE) technologies for small and medium enterprises (SMEs) and households in North Macedonia”. The training will bring to the experts knowledge on:

- Financial engineering and business planning skills to identify, select and develop Renewable Energy and Energy Efficiency investment projects and prepare bankable Renewable Energy and Energy Efficiency project proposals and applications to the SDG Fund/Facility;
- Full range of skills described above and the capacity to develop further projects to a standard project application format, as required by the Fund, and/or the participating in the facility financial institutions.

# Energy Efficiency/Renewables: Main Investment 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?

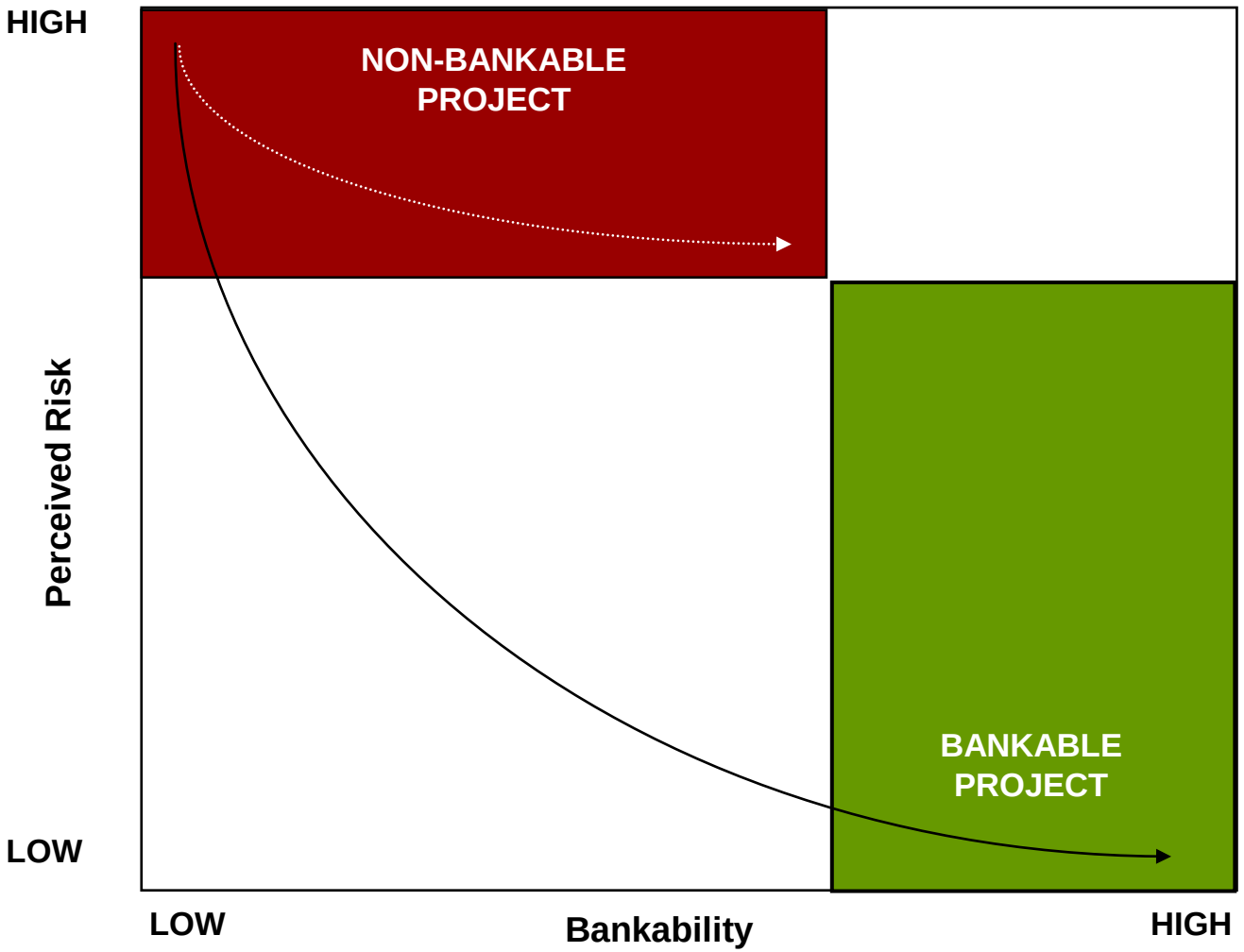
- Long term PPA possible with validity exceeding longest debt tenor?
- Turnkey contractor under fixed price date certain contract?
- Reputable O&M contractor?

- 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?

# Renewables and Government Support

GOVERNMENT SUPPORT




- Tendering
- Obligation
- Fiscal
- Feed-in Tariffs

**Feed-in tariffs bordering bankable.**

# Energy Efficiency and Renewable Energy Sup

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.
- EC and/or Government 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.

# Energy Efficiency and Renewable Situation

MARKET ECONOMICS

- Significant potential for energy efficiency in industry and buildings.
- Varying potential for renewable energy.
- By its nature and available potential wind/solar/hydro power will not provide a secure base load electricity supply.
- Licenses for windparks/solar have been awarded. Only a small 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


- 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


- 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


- 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


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


Main issues:

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

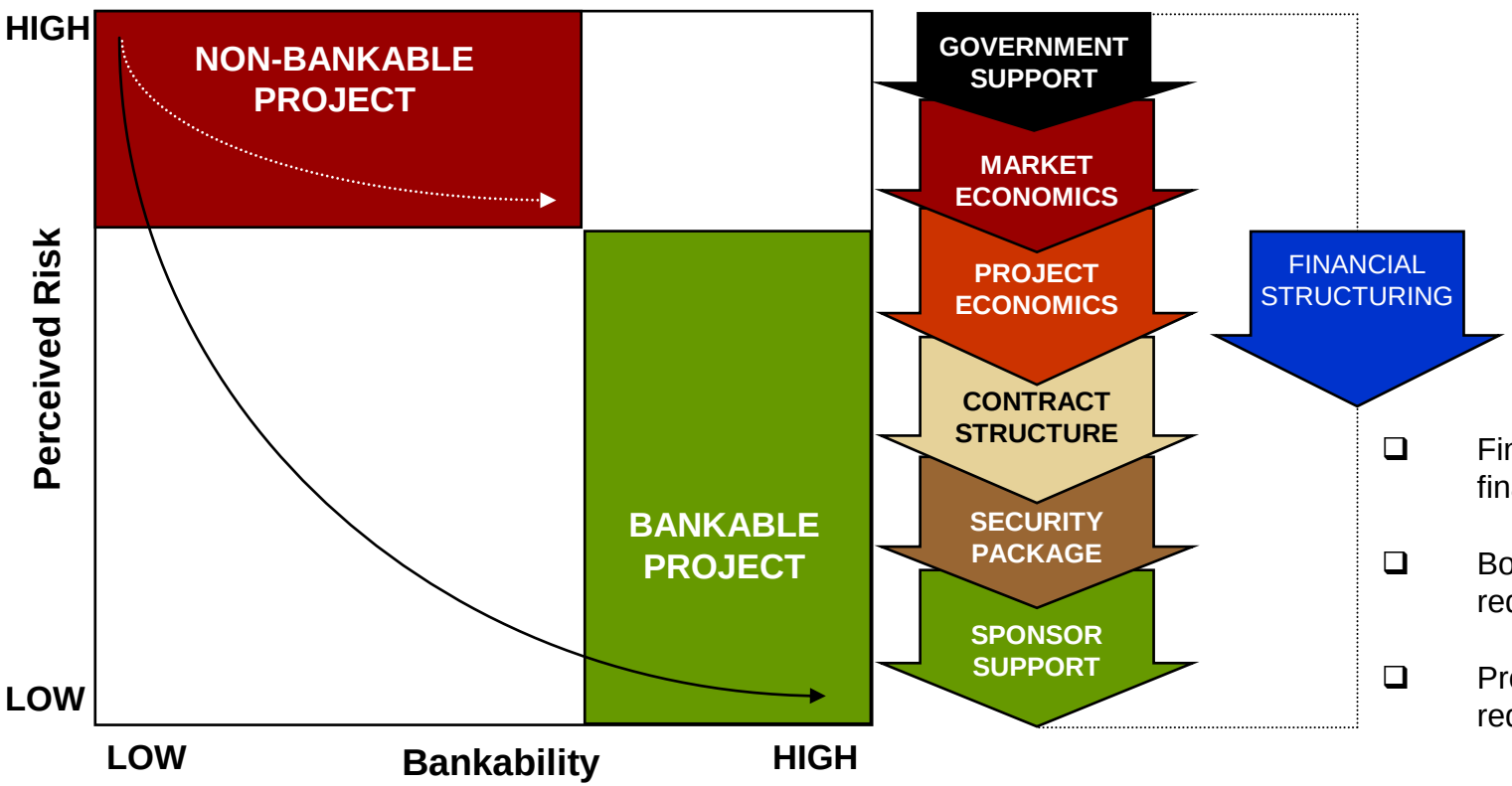
and …

- Incomplete and badly presented proposals and business plans

As a result:

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

# The General Project Finance Feasibility Matrix

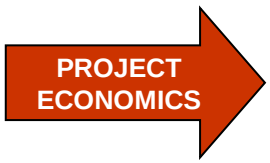



- ❑ Financial market-forms / financial products
- ❑ Bond Investor / Lender requirements
- ❑ Project Sponsor requirements

# Capacity needed


- 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?


- 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?




- 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?

# Capacity needed


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?**

# Assistance to develop bankable projects

**Needed:**

Concerted efforts to build institutional capacity among:

- Governmental and municipal officials;
- Developers and;
- Investors
- Specialists in the field

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

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

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