



"INOGATE Technical Secretariat & Integrated Programme in support of the Baku Initiative and the Eastern Partnership energy objectives" Project

**BUILDING PARTNERSHIPS FOR
ENERGY SECURITY**

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INOGATE Study Tour/Workshop

Energy Efficiency & Renewable Energy Sources



Special Session

“Train the trainers” (TTT)

EE/RES Project Analysis: Topics to be focused on

**Bank BelVEB OJSC
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EE/RES Project Analysis: Topics to be focused on:

- Non proven technology
- Sponsors have no experience with the selected technology (e.g. biomass with problematic input mix, new HEPP turbine with low efficiency in changing water conditions)
- Financing of non ready to build projects through debt financing (e.g. geothermal project in Germany, trial drills financed with debt financing)





- Continuous biomass price increase in non integrated projects (very often!)
 - > fully integrated: supply of biomass by own company
- Periods of feedstock agreement shorter than period of loan agreement
- Political problems: new taxes with retroactive effect, not considered in the financial model
 - > letter of support by the government?





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- Local sponsors not checked carefully: cost of land, land rights, project development far too high compared to other countries (international standards)
- > full payment of project developer after 1-2 years of full completion with escalation clause in case of better performance of the plant compared to business plan



- In case of dumping prices for equipment (e.g. Chinese PV-panels):
 - > danger that the low price is used by the sponsors to compensate their equity obligation
 - > offer only debt financing in an amount/MW, which you fix according to actual prices of the equipment
- Too large land (compared to the project's needs) offered by sponsors as equity contribution -> non adequate risk participation





- After DD no „black or white decision“
 - > no means: the bank loses the project
 - > yes, but(e.g flexible repayment installments during the first 4 years, equity to be increased to min. ..%, etc.) → as explained in the lecture and according to example in the final quiz
- Benchmark prices per MW:
 - Wind: 1.2-1.4 MEUR,
development cost: 0.15-0.20 MEUR



Hydro: 2.0 MEUR, but could be much more
depending on infrastructure costs

PV: 1.5 MEUR, but prices falling due to
competition by Chinese panel
suppliers

- > IMPORTANT: benchmarks within the sectors to
compare different wind, hydro, PV projects
- > databank to compare:

CAPEX

development costs

turbine costs

connection costs

distance to the next power line

etc.



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