



PROGRAMME FUNDED BY THE EU



# **"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

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**Two exercises in developing EE/RES  
financing plans and lending conditions**

**New ITS Project**

**Vienna, Austria**

**May 15, 2013**

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# Exercise #1

## Renewable Energy Sources



### Project information

Wind turbine (power)	0.8 MW
Confidence level	P75
Investments	1 200 000 €
Full-load operating time	2 800 h/yr
Tariff	0.125 €/kWh
O&M cost	5% of calculated generation
Company assets	3 600 000 €
Capital	2 400 000 €
Depreciation allowance	20 years

# Exercise #1 - Create:



## 1. Financing Plan

- Investment sources (bank, IFI, own sources, grant)
- Investor's share
- Investment timesheet by sources
- List of acceptable values of project indicators (NPV, SIR, IRR, PBP, D/R)

## 2. Financing Conditions

- Financing tool (loan, leasing, equity investment, LC/LG)
- Lending period/term
- Annual interest
- Grace period
- Repayment schedule





### 3. Risk management/security

- Collateral / guarantees / security
- Solvency assessment
- Tariff / market risks
- Political risks
- Technical / O&M risks
- Ecological risks

### 4. Implementation management

- Project development, (engineering, licenses, expertise, environmental impact statement)
- Contracting
- Construction
- Equipment purchase
- Commissioning

**Calculate Exercise #1 project indicators**  
**(NPV, SIR, PBP, IRR)**

# Exercise #2

## Energy Efficiency



### Project information

Information center uses 3 cooling units of 1180 kW ea. Energy auditor recommends changing technology to 1 free cooling unit @ 2110 kW.

<b>Baseline consumption</b>	<b>3 100 000 kWh</b>
<b>New consumption</b>	<b>1 850 000 kWh</b>
<b>Investments</b>	<b>520 000 €</b>
<b>Full-load operating time</b>	<b>8 760 h/yr</b>
<b>Tariff</b>	<b>0.125 €/kWh</b>
<b>O&amp;M cost</b>	<b>5% of annual energy cost</b>
<b>Company assets</b>	<b>2 200 000 €</b>
<b>Capital</b>	<b>1 400 000 €</b>
<b>Depreciation allowance</b>	<b>15 years</b>

# Exercise #2 - Create:



## 1. Financing Plan

- Investment sources (bank, IFI, own sources, grant)
- Investor's share
- Investment timesheet by sources
- List of acceptable values of project indicators (NPV, SIR, IRR, PBP, D/R)

## 2. Financing Conditions

- Financing tool (loan, leasing, equity investment, LC/LG)
- Lending period/term
- Annual interest
- Grace period
- Repayment schedule





### 3. Risk management/security

- Collateral / guarantees / security
- Solvency assessment
- Tariff / market risks
- Political risks
- Technical / O&M risks
- Ecological risks

### 4. Implementation management

- Project development, (engineering, licenses, expertise, environmental impact statement)
- Contracting
- Construction
- Equipment purchase
- Commissioning

**Calculate Exercise #2 project indicators**  
**(NPV, SIR, PBP, IRR)**