



EE Projects and opportunities in Serbia

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EE and RES investment opportunities

According to the Program for the implementation of the Serbian Energy Strategy until the year 2015 for the period 2007 to 2012

	Mil Euro
Modernization and rehabilitation of the DH sector	153.22
Modernization of energy facilities in industry	405.64
Energy improvements in the housing sector	≈328.1
RES investment estimate	2350.00



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Ongoing EE and RES projects

Investments in the DH sector

EBRD	Rehabilitation and modernization of DHS in Belgrade	soft loan 20 mill EUR
SIDA	Improvement of DHS in Belgrade through investments and capacity building	grant 5.1 mill EUR
SEEA DH EU/EAR SF	6 towns (Subotica, Beocin, Pancevo, Smederevo, Kraljevo, Novi Pazar)	grant 350.000



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Investments in the DH sector



KfW – I, II, III phase

**EBRD
KfW – I, II phase**

KfW – III phase

EAR DH project

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Investments in the DH sector

❖ **KfW – Rehabilitation of DHS phase III**

→ **AIM:** *Sustainable and efficient heat supply to consumers – better living conditions and environmental protection*

- decrease heat energy consumption, increase of energy efficiency of boilers, reduction of water/heat losses - DHS

- build capacity, cover costs, increase collection ratio in DHC

→ **Funds (EUR):**

8 mill

+

12 mill

+

10 mill

+

5.5 mill

+

2 mill

Grant FRG

Loan KfW

Local contrib.

Debt swap

Grant - TA

→ **Implementation: 36 months**

- **PEA:** MoME

- **PSC:** MoME, KfW, MF, JKP

- **CPIU** (including Consultant)

- **PIU** in each DHC (Zrenjanin,

Kragujevac, Nis, Kraljevo,

Pirot, Sombor)

→ **Procurement:**

Public tenders (ECA, KfW procedures)

→ **Status:**

-In progress



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DHS Ongoing Projects

❖ **EAR – Rehabilitation and modernization of DHS**

➔ **AIM:** *Sustainable modernization and rehabilitation of DHS and institutional changes*

- modernization/rehabilitation of boilers, reduction of water/heat losses (distribution system), modernization of substations and control system

- Tariff systems to cover costs, increase collection rates, consumption based billing

➔ **Funds (EUR)- Grants:**

Projects

19.3 mill

Supervising
Engineer

1.5 mill



Cacak ~ 3.7 mil
Pancevo ~ 3.55 mill
Subotica ~ 3.5 mill
Uzice ~ 3.8 mill
Valjevo ~ 3.7 mill *

* + additional
loans – banks,
MIA

➔ **Implementation:** 🕒 15 Nov 2007

- **PSC:** EAR, DHC representatives

- **PMU in each DHC (5)**

➔ **Status: Finished**



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Ongoing projects

Selected Case Study:

PEA in “Sojaprotein” soybean processing Factory, Bečej



Existing situation: 2 x 14 t/h boilers, natural gas as fuel

Annual fuel cost: 2,3 Mil. €

Proposed EE Measure: New boiler, soybean straw as fuel

Investment cost for recommended EE measure: **2 Mil. €**

Annual cost savings: **~0,9 Mil. €**

Simple pay back period: **~2,2 years**



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Potential projects

"Methanol & Acetic Acid Complex“, MSK Kikinda

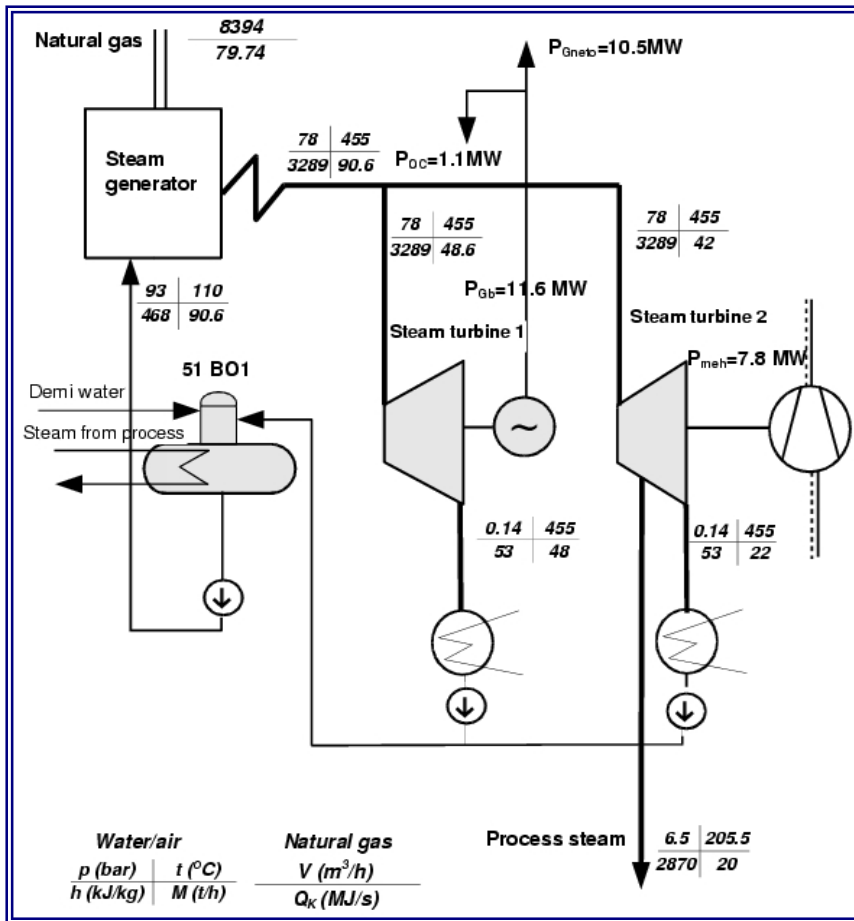
- Analysis of possibilities for CHP,
- Feasibility Study of 14 MW Gas Turbine Plant for CHP.

Name of company:	MSK
Place:	Kikinda, Serbia
Main activity:	Production of organic chemicals
Products:	Methanol, Acetic acid, Sodium cetate trihydrate

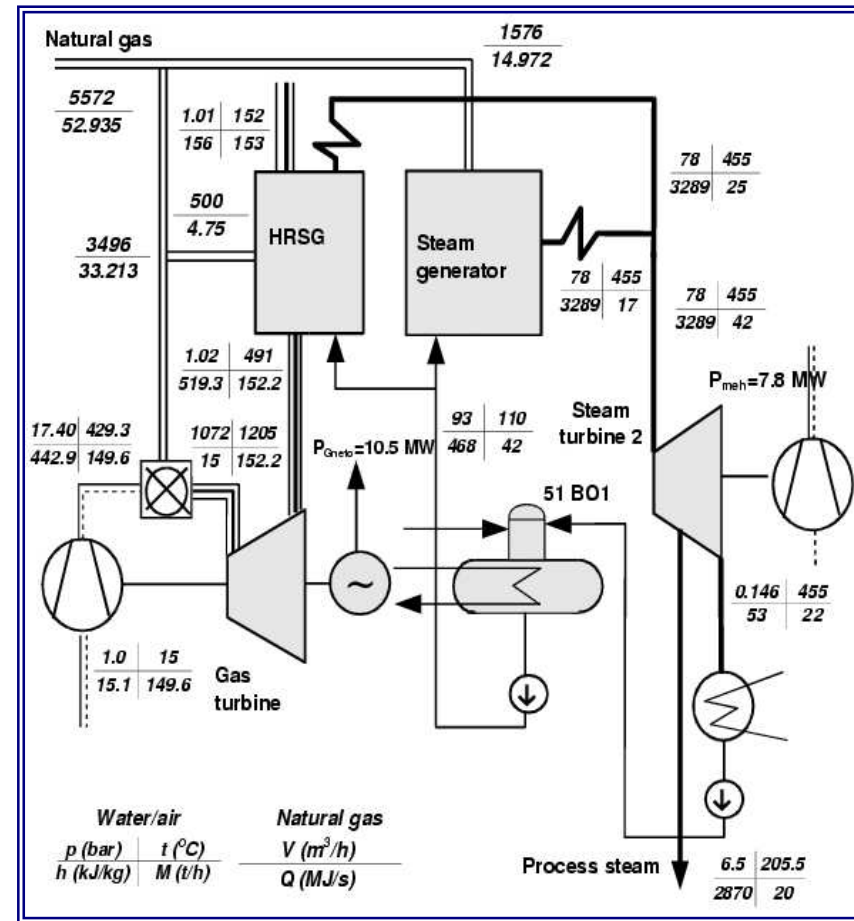


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Potential projects



MSK power plant – Present situation



Optimal Solution: Combined cycle with CHP.
Increase of el. efficiency: 23% 34.5%



Potential projects

	Existing Plant	New Plant
Gas consumption:	~ 66 Mil. m ³	~ 41 Mil. m ³
Annual fuel cost:	~ 13 Mil. €	~ 8 Mil. €
Annual saving in gas:	~ 25 Mil. m ³ , approx 38% less	
Turn key cost of the new plant:	~ 9 million EUR	
The simple pay back period:	1.82 year	



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Potential projects

Wind farm “Popadija” near Negorin

Project carried out by SEEA,

Installed capacity 45MW

State of investment: Prepared feasibility study



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Potential projects

Rated power (kW/Unit)	3.000
Wind turbines (Units)	15
Total power installed (MW)	45
Equivalent hours(h/year)	2.505
Energy production (GWh/year)	112,7
Selling energy price (c€/kWh)	11,0
Income from energy sales (€/year)	12.401.532
Investment (€/kW)	1.375
Interest rates %	8,5%
Financial structure (% Equity)	22%



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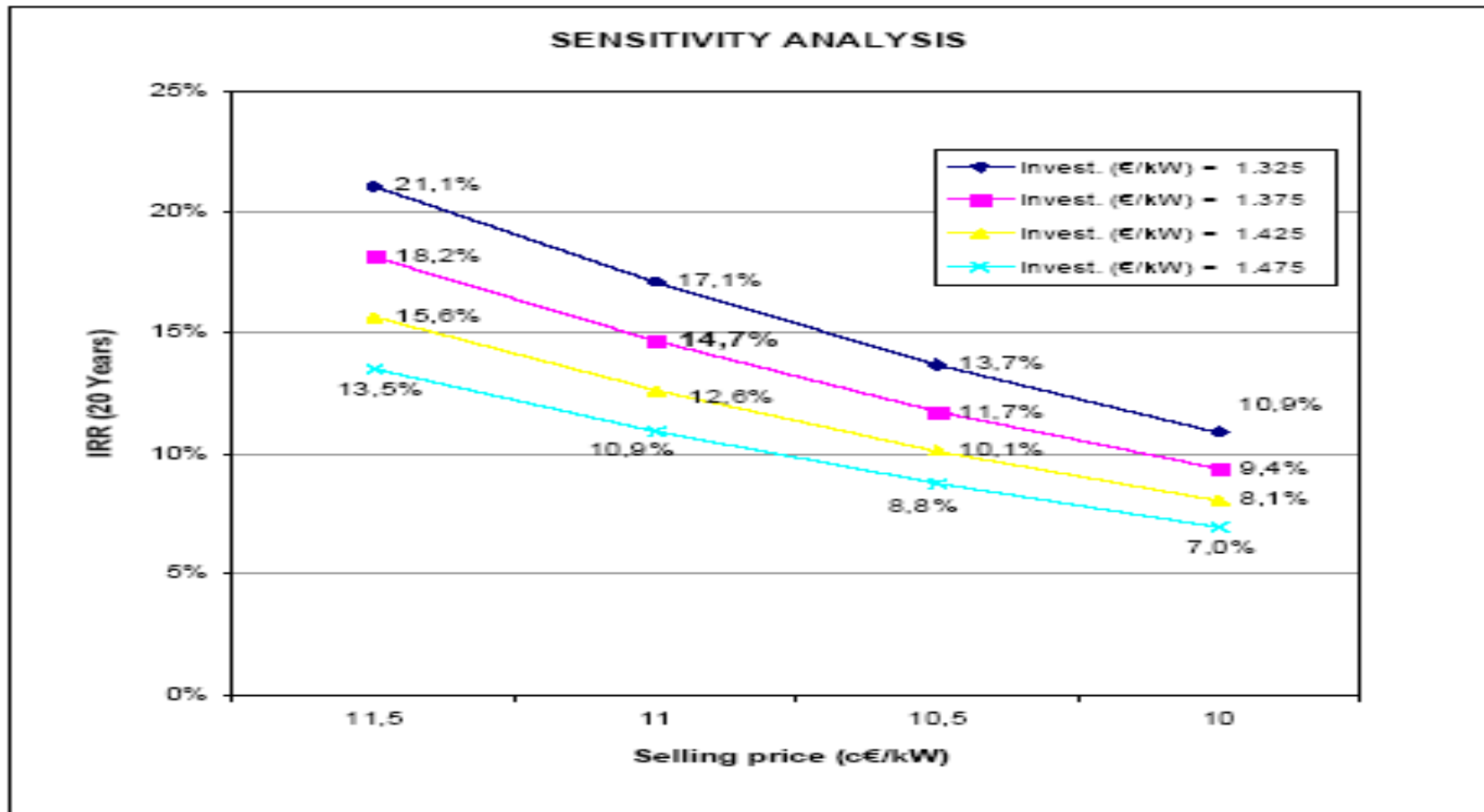
Potential projects

Items	Items €	%
Total cost of turbines	50.241.944	81,2%
Civil Works	3.150.256	5,1%
Electric Installation	1.321.747	2,1%
Studies and Engineering	354.152	0,6%
Substation	2.199.970	3,6%
Transmission Line	2.422.379	3,9%
Others	898.596	1,5%
Development Costs	1.285.955	2,1%
Total material investment	61.875.000	100,0%



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Potential projects



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Thank you for your
attention

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