

METHANOL & ACETIC ACID COMPLEX

Presentation

18. September, 2014.

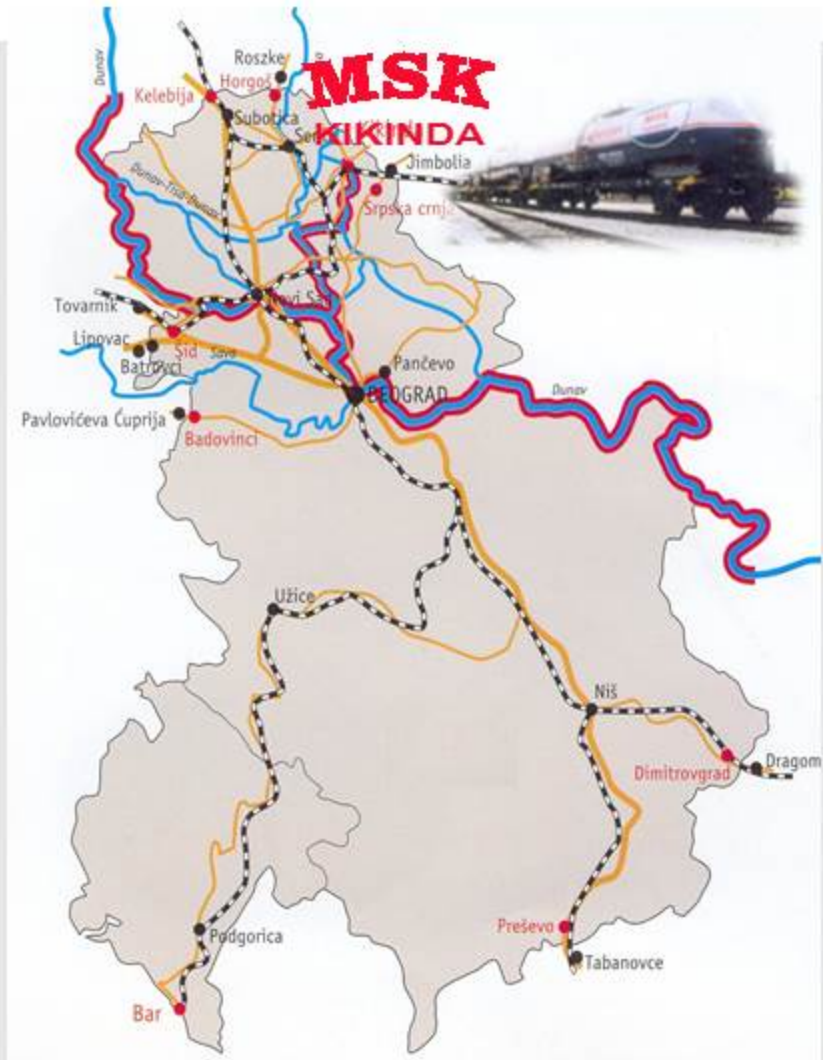
Methanol & Acetic Acid Complex", Joint-stock company – Kikinda (MSK).

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METHANOL & ACETIC ACID COMPLEX

LOCATION

- Headquarters and process units Kikinda, 130 km north from Belgrade, 76 km far from Hungarian and 8 km far from Romanian border.
- Acetic Acid Terminal is in the Port of Bar, Montenegro, at south of Adriatic Sea Coast. Reloading capacity up to 5.000 Mts. vessels.
- MSK-CG doo is 100% owned by MSK AD Kikinda



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PRODUCTION PROGRAM

- Methanol, Technical Grade, min.99,85%
- Acetic Acid, Technical Grade, min.99,85 %
- Acetic Acid, Foodgrade, Pharmagrade and Kosher Quality.
- Liquid oxygen , Technical Grade, min.99,5 %
- Liquid nitrogen, Technical Grade, min.99,5 %

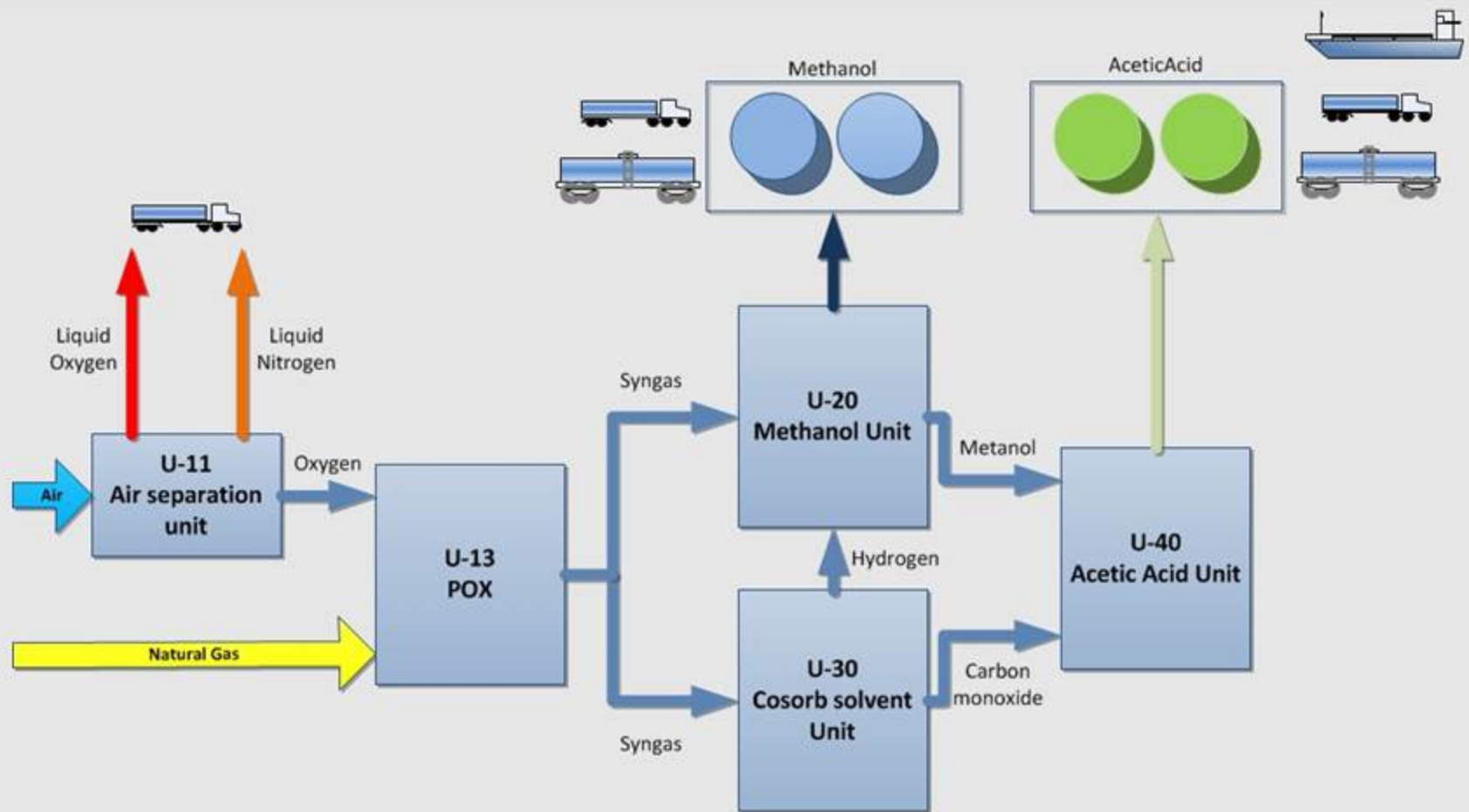
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PRODUCTION UNITS

- Air separation with capacity of 19 000 Nm³/h of oxygen - L'Air Liquide, France
- POX with capacity of 300.000 t/y - Texaco, USA
- Methanol with capacity of 200.000 t/y - ICI, Great Britain
- Carbon monoxide with capacity of 55.000 t/y - COSORB process - KTI, Holland
- Acetic acid with capacity of 100.000 t/y - Monsanto, USA



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Process scheme
MSK Kikinda

METHANOL & ACETIC ACID COMPLEX TRANSPORTATION

- Methanol & Acetic Acid Complex has been located and organized in such a way that provides for transportation of products to be made by rail, by land or water ways.
- MSK is founder and 100% owner of "MSK-CG" company from Bar in Republic of Montenegro where terminal for Acetic Acid transshipment is located.



Commercial Tanks:

- Methanol Commercial Tanks :
2 x 10.000 m³
- Acetic Acid Commercial Tanks:
2 x 5.000m³



Private rail tank cars:

- 88 pcs. for Methanol and
- 122 pcs. for Acetic Acid transportation



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SALE OF GOODS

- More than 95% of produced methanola and more than 98% of produced acetic acid are made for export , mainly in Western an Central Europe.
- On main site in Kikinda exist facilities and accessories for loading and reloading goods in and from reilroad vessels and truck vessels and loading into containers. MSK goods are transporting mainly in our 210 reilroad vessels .
- In Port of Bar , on Adriatic sea in Republic of Montenegro , MSK have its own facility and instalation for direct reloding from reilroad vessels to boat .
- All transportation of goods are according ADR/RID rules .



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SUPPORT TO PRODUCTION

- Laboratory for control of all present and future products and raw materials.
- Control and maintenance of equipment (mechanical, electrical, instrumental)
- Administrative and other support: commercial, bookkeeping, QA, personnel, legal, etc.



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MSK has implemented quality systems: ISO 9001; ISO 14001; BSI 18001, Kosher:

- Quality management system established relates to all products, processes and employees in accordance with 9001.
- Occupational Health and Safety Advisory Services (OHSAS) in accordance with ISO 18000 and is currently working towards the ISO 14001 Environmental Management Standard.
- MSK has Kosher certificate for acetic acid food grade, acetic acid additive for food industry, and acetic acid technical grade.
- For MSK customers from European Union, German company UMCO GmbH as Only Representative, prepares the SDSs in accordance with REACH Regulation.

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- Health and Safety, in line with the requirements of the Health & Safety At Work Act and other relevant legislation governing work practices, is a key factor of this system and seeks to ensure that our management and workforce adhere to the same principles and shared responsibility towards caring for employees, customers, the local community and the wider environment.



instructions

POSSIBILITY OF COGENERATION OF ELECTRICITY AND PROCESS STEAM

MSK has also considered cogeneration of electrical energy and process steam as one of the measures for energy savings.

MSK finished the General Design with the previous Feasibility Study for Gas Turbine Cogeneration Plant for Electricity and Heat in MSK Kikinda. Based on the extract from the General Design, the greater flexibility is provided by the construction of 15 MW gas turbines.

This would primarily provide electricity for own needs and process steam for production units.

Apart from reduction of natural gas consumption by MSK Power Plant, the extinction of conventional boilers and change to cogeneration would drastically reduce NOx emissions in MSK.

Estimated investment costs: approximately €17 mil.

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MSK DEVELOPMENT PROGRAMMES

- Construction of multi-purpose process units for production of acetate esters (ethyl acetate, butyl acetate, etc.)
- Construction of triacetin production plant
- Construction of multi-purpose plant for recovery of spent solvents and for production of small volume acetate ester solvents (isopropyl acetate, propyl acetate, methyl acetate, etc.).

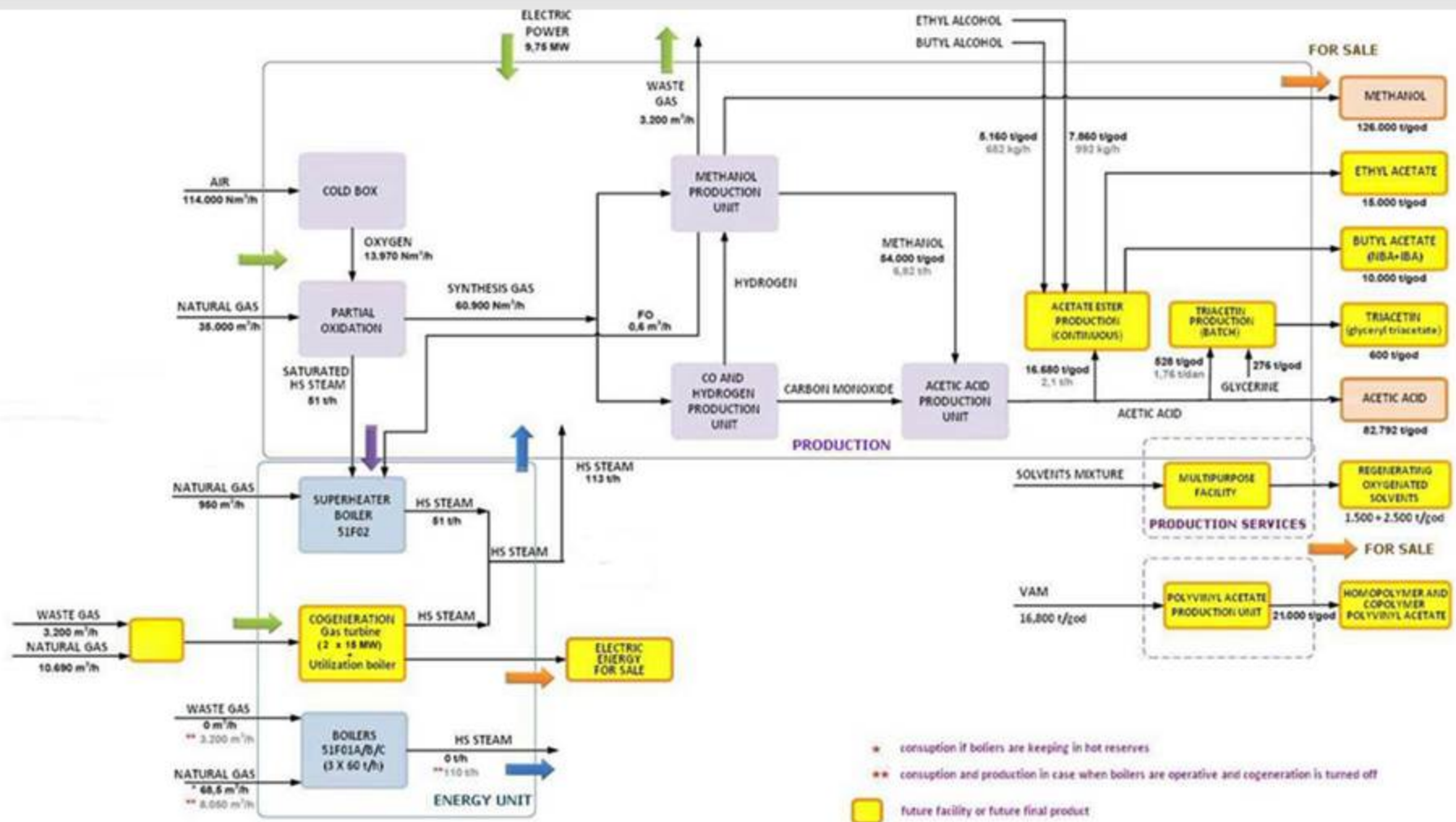
Estimated investment: approximately €11 mil.

- Construction of polyvinyl acetate (PVAc) homopolymer and copolymer production plant

Estimated investment: approximately €9 mil.

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MSK DEVELOPMENT PROGRAMMES SCHEME



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OWNERSHIP OF LICENSES

- MSK Kikinda no longer has any contractual obligations towards the licensor of the technology incorporated into the existing plant for production of 100.000 t/y of glacial acetic acid in Kikinda, so that the capacity duplication based on the existing production plant copying appears to be the optimal technical and economic solution.
- In order to optimize the operation of the existing and the new acetic acid units, MSK plans to replace Cosorb unit with process unit for cryogenic separation of CO.









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54T01-A



















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TRANS ALINA

NO SMOKING
SAFETY FIRST

SEATRANS