



**EMBASSY  
OF THE REPUBLIC OF UZBEKISTAN  
TOKYO**

№ UZ- 70

The Embassy of the Republic of Uzbekistan to Japan presents its compliments to the Japan Association for Trade with Russia and NIS (ROTOBO) and has the honor to present the list of investment projects for establishing of DME and PVC production complexes in Uzbekistan (chemical industry), for their joint implementation with Japanese companies in Uzbekistan.

The Embassy requests the ROTOBO to distribute attached herewith the list of the proposed projects among the Japanese companies which may raise the interest to cooperate in Uzbekistan chemical industry, as well as to consider the possibility to allocate mentioned information on the ROTOBO web-site.

The Embassy of the Republic of Uzbekistan avails itself of this opportunity to renew to the Japan Association for Trade with Russia and NIS the assurances of its highest consideration.

December 16, 2011



Japan Association for Trade  
with Russia and NIS (ROTOBO),  
Tokyo

## **Investment proposal**

**1. Project name: "Launching of dimethylether (DME) production ".**

**2. General information about project initiator:**

38, Navoi str., Tashkent, Republic of Uzbekistan, State Joint Stock Company (SJC) "Uzkimyosanoat".

SJC "Uzkimyosanoat" consists of 12 large companies, 13 regional distributor organizations, implementing sales of chemical products to the agriculture, project and research institutions and transportation forwarder companies.

Main products of SJS "Uzkimyosanoat" companies - mineral fertilizers, inorganic compounds, organic chemistry products, artificial fibers, plastics, chemicals, plant protection chemicals.

**3. Information about the enterprise, on which basis or part of production facilities (territory) the project is to be implemented (if any):** SJS "Uzkimyosanoat"

**Total area and free production facilities:** will be specified after the development of pre-feasibility study.

**4. Information about the project:**

**4.1. Marketing**

**Goods proposed for the production, estimated production volume of goods and services:**

Methanol as the feedstock for DME production – consumption coefficient to produce 1 tonne of DME will be defined after selection of DME production technology.

Annual production volume of dimethylether is 300 tonnes daily or 100 thousand tonnes annually.

Result or marketing researches with sales opportunity in domestic market and exports (with reference to the volume of export in natural and cost units and external markets)

The materials of marketing research carried out by "CREON" (Moscow, Russia) - "Rationale for the organization of production of methanol and dimethylether in the Republic of Uzbekistan on the basis analysis of trends in the global market by 2020" and by the company "DONAEV MANAGEMENT CONSULTING" (Tashkent, Uzbekistan) – "marketing research of dimethylether (DME) in the territory of Central Asia and the Russian Federation" are available.

**Main producers of similar products (competitors) in the country, region and external market:**

In the country and the region competitors are not available. In the Russian Federation attempts are being made to produce DME at the pilot installations. There is a similar production in China, in most of which coal is used as a raw material, and in Japan (imported methanol is used as a raw material).



### **Production competitiveness by quality and quantity indicators:**

Estimated product price is 400 USD per 1 tonne, whereas the world price, obtained in marketing researches, is 550 USD.

#### **4.2. Production:**

**Project provision with feedstock and other material resources with the reference to price, quantity and quality:**

It is planned to obtain DME by indirect method through methanol from gas synthesis, which consist of carbon oxide, carbon dioxide and hydrogen, which in its turn is produced from natural gas. Quantity and quality indicators will be specified in project pre-feasibility study.

#### **4.3. Construction, re-construction or modernisation:**

**Investment areas (new construction/modernisation or technical upgrade/other) – new construction.**

Requirements to supply of object with industrial infrastructure will be specified during development of project pre-feasibility study.

#### **4.4. Financing:**

**Estimated project cost including cost of construction or re-construction\*:**  
90 million USD, including:

- purchase of equipment\*
- building and assembly works\*
- other\*

**Anticipated commissioning date: 2014.**

**Status of development/examination of project pre-feasibility/feasibility study – project pre-feasibility study development is required.**

### **5. Expected results from the project**

The expected volume of production:

- in physical terms – 100 000 tonnes/year
- in terms of value – 40 mln USD

Expected net profit will be determined after the development of Pre-feasibility Study of the project.

Export volume: in the initial stage of implementation all product will be sold only to the domestic market.

**6. Current status of development and examination of a project documentation**  
Necessary to develop Pre-feasibility Study of the project.

\* will be specified during development of Pre-feasibility study of the project.

**PASSPORT**  
**of investment project:**

**Launching of dimethylether (DME) production**

1. Organisation – project owner – SJSC “Uzkimyosanoat”
2. Project objective (short description) – launching of alternative fuel production and expanding the range of products to provide market with new types of fuel.
3. Investment areas (new construction/modernisation or technical up-grade/other) – new construction.
4. Decisions of the Government of the Republic of Uzbekistan about project implementation (if required) – not required at this stage of implementation.
5. Availability of governmental guarantee (if required) – not required.
6. Status of development/examination of project pre-feasibility/feasibility study – project pre-feasibility study development is required.
7. Foreign partner and investor (including creditor, general contractor) – under determination.
8. Project location (region, district, city) – Navoi Region, Uzbekistan

No	Title	Unit	Project indicator*
1.	Project initiation (organisation, date and document №)	Decree of the President of the Republic of Uzbekistan №1072 dated 12 March 2009 "About programme of implementation measures of the most important projects of production modernisation, technical and technological up-grade for 2009-2014"	
2.	Total cost, including:	mln. USD	90*
2.1.	— in free convertible currency (FCC)	mln. USD	70*
2.2.	— in national currency	mln. USD	20*
3.	Total expenditures in FCC, including:	mln. USD	70
3.1.	— purchase of equipment	mln. USD	*
3.2.	— building and assembly works	mln. USD	*
3.3.	— other	mln. USD	
4.	Total expenditures in national currency, including:	mln. USD	20
4.1.	— purchase of equipment	mln. USD	*
4.2.	— building and assembly works	mln. USD	*
4.3.	— other	mln. USD	*
5.	Sources of financing:		
5.1.	— budgetary funds	mln. USD	
5.2.	— foreign investments and credits, including:	mln. USD	70*
5.2.1.	• governmental guarantee	mln. USD	
5.2.2.	• foreign direct investments	mln. USD	70
5.3.	— internal funds		



5.3.1.	• in free convertible currency (FCC)	mln. USD	
5.3.2.	• in national currency	mln. USD	*
5.4.	— credits of commercial banks		*
5.4.1.	• in free convertible currency (FCC)	mln. USD	*
5.4.2.	• in national currency	mln. USD	*
5.5.	— credits of Fund of Reconstruction and Development of the Republic of Uzbekistan	mln. USD	
5.6.	— other sources (specify)	mln. USD	
6.	Construction period, total	months	24*
6.1.	— date of work commencement	month, year	2012*
6.2.	— date of commissioning	month, year	2014*
7.	Project payback period, total*	years	*
	<b>Anticipated results from project implementation</b>		
8.	Annual production volume of goods and services in terms of quantities, including:	th. tonnes per year	100
8.1.	— to export	th. tonnes per year	
8.2.	— to internal market	th. tonnes per year	100
9.	Annual production volume of goods and services in terms of money, including:	mln. USD	40*
9.1.	— to export	mln. USD	
9.2.	— to internal market	mln. USD	40
10.	Expected distribution markets:		
10.1.	— internal	%	100
10.2.	— external	%	
11.	Project localisation level, total	%	90*
12.	Import reduction as the result of project implementation	mln. USD	*
13.	Cost saving:		*
13.1.	— electricity saving	th. kW•h	*
13.2.	— gas saving	th. m <sup>3</sup>	*
13.3.	— oil products saving	th. tonnes	*
13.4.	— other	in appr. units	*
14.	Number of new jobs created	persons	*
15.	Number of new product types	pieces	1*

\* will be specified when developing project pre-feasibility study.

\*\* will be obtained after development and examination of project pre-feasibility study.

## Investment proposal

**1. Project name:** "Establishment of polyvinylchloride (PVC) production complex on the basis of acetylene and chlorine and caustic soda".

**2. General information about project initiator:**

**Project owner - State Joint Stock Company "Uzkimyosanoat"**

**Location and post index:** 38, Navoi str., Tashkent, Republic of Uzbekistan, SJSC "Uzkimyosanoat".

**3. Information about the enterprise, on which basis or part of production facilities (territory) the project is to be implemented (if any):**

**Name of the enterprise and requisites:** - OJSC "Navoiyazot".

**Location and post index:** 210105, Navoiy Region, Navoiy City, 55.

**Main activities:** production of ammonia, mineral fertilisers, organic chemistry products, "nitron" fibre, thiourea etc; produces over 60 production items.

**Main economic and financial indicators during last 3 years (value and volume of produced goods (services), export, turnover):**

Indicators	Unit	2008	2009	2010
<b>Main products output:</b>				
ammonium nitrate	th. tonnes	918,431	953,492	896,126
nitron	th. tonnes	12,421	11,887	14,182
ammonium sulphate	th. tonnes	16,631	18,676	18,138
Acetic acid	th. tonnes	5,814	3,27	3,828
sodium cyanide	th. tonnes	13,917	17,721	18,854
thiourea	th. tonnes	1,1596	1,447	1,4
caustic soda	th. tonnes	20,844	17,843	23,095
chlorine	th. tonnes	9,4032	7,212	11,95
hydrochloric acid	th. tonnes	18,076	16,907	20,901
Nitrogenous phosphate fertilizers	th. tonnes	0	10,248	33,547
Workload of capacities	%	81,5	93,9	85,9
Export	th. USD	62 817,03	61 731,65	53 667,3
Residual value of fixed assets	th. USD	38 005,3	37 434,2	40 591,7
Net profit	th. USD	4 019,7	806,34	747,4

**Total area, in ha** 887,28 ha

**Including production and building area, in ha** 565,76 ha



### Information about available utilities and infrastructure:

Road	available asphalt road; distance to the regional motorway – 5 km
Railway	available railway line; distance to "Tinchlik" station – 3 km
Power supply	power is supplied by 6 main substations of 110/6 kV from NSDPP and "Himiya" substation through high-voltage lines of 110 kV on metal pylons; overall capacity – 812 MVA, average power consumption – 170 MVA
Water supply	water intake is carried out by technical water supply shop of Navoiy Mining & Smelting Complex through 3 mains and 4 conduits of utility and drinking water
Sewerage	separate system of utility and faecal, industrial, conditionally clean, and torrential waste water; discharge №1 – diameter of 1 100 mm, 10 million m <sup>3</sup> per annum; discharge №2 – 1 200 mm, 42 million m <sup>3</sup> per annum
Gas supply	gas supply through two gas pipelines from Kogon Linear Industrial Agency of Gas Mains
Heat supply	performed from NSDPP, own steam boilers and boiler-utilisers; steam consumption – 13 kgf/cm <sup>2</sup> , T = 300°C and 21 kgf/cm <sup>2</sup> , T = 340°C

**Personnel:** average personnel quantity is 10 516 people.

#### 4. Information about the project:

##### 4.1. Marketing

Marketing concept is based on:

- Domestic demand for caustic soda and PVC;
- Sustainability of the market, allowing a choice whether to load capacities of the enterprise;
- Profitability, showing the level of profitability in this market.

##### Products proposed for the production:

Caustic soda is used in chemical, oil-chemical, cellulose-paper industry and other sectors of production (in production of paper, soap, synthetic fibers).

PVC is the third largest in the world of polymers in terms of production. PVC pipes are made, window frames, flooring and waterproof roll materials, containers for infusion solutions and blood, the packaging of tablets, shell electrical wiring, corrosion protection at the bottom of cars, toys, belt conveyors and awning materials.

Product sales		
<b>Export</b>		
Caustic soda	th. Tones	12,8 (40%)
PVC	th. Tones	25,0 (50%)
<b>Internal market</b>		
Caustic soda	th. Tones	19,2 (60%)
PVC	th. Tones	25,0 (50%)

40% of caustic soda (12,8 th. tonnes) produced within the project, will be exported, 55% (17,6 th. tonnes) for internal market and 5% (1,6 th. tonnes) for in-plant consumption.

According to the data of State Committee of Statistics of Uzbekistan, the amount of caustic soda imported into the Uzbekistan is:

- in 2007 year – 20,79 th.tonnes,
- in 2008 year – 10,77 th. tonnes,
- in 2009 year – 32,7 th. tonnes,
- in 2010 year – 28,6 th.tonnes, and
- 1<sup>st</sup> quarter of 2011 year – 12,5 th.tonnes.

The demand for flexible PVC factories in Uzbekistan is 35-40 thousand tons per year. According to the data of State Committee of Statistics of Uzbekistan the amount of pure PVC (not mixed with other components) imported into the Republic is:

- in 2007 - 12.8 thousand tons,
- in 2008 - 19.6 thousand tons,
- in 2009 - 24.3 thousand tons,
- in 2010 - 26.8 thousand tons, and
- 1<sup>st</sup> quarter of 2011 - 3.6 thousand tons

Given the increasing range of products made of PVC produced in Uzbekistan, but due to the construction industry annual recycling of PVC in the coming years may be 45 000 tonnes.

**Imported PVC is used:**

- For the manufacture of flooring on the basis of a soft (plasticized) PVC (PVC-linoleum)
- For the manufacture of flooring based on hard (unplasticized) PVC (PVC-laminate)
- For the production of window profiles on the basis of rigid PVC
- For the manufacture of pipes and fittings on the basis of rigid PVC
- Gutters and plastic roofing on the basis of rigid PVC
- For the production of decorative products for the furniture industry
- For the production of cable insulation on the basis of soft PVC
- For the manufacture of footwear on the basis of soft PVC
- For the production of laminating plastic to cover furniture
- Production of PVC foam sheet to fill the construction of doors, etc.
- For the manufacture of hoses on the basis of soft PVC

**The results of marketing research with an assessment of domestic sales and exports:**

Caustic soda

The need for the Uzbek market of 50-60 thousand tons per year, with the forecast increase in consumption of 3.0% per year

Polyvinylchloride

Polyvinyl chloride is a large-capacity thermoplastic and ranks third worldwide in terms



of production and consumption after polyethylene and polypropylene. The need for the Uzbek market of 35-40 thousand tons per year (including all types of PVC), with a forecast increase in consumption of 4.7% per year

**The main producers of similar products in the country and the region:**

Currently:

- Caustic soda is made only at the JSC "Navoiazot." Existing production capacity - 26 million tons per year "
- Polyvinyl chloride in Uzbekistan and the Central Asian region is not performed.

**Assessment of competitiveness in quality and price indices.**

The technological process provides a competitive advantage in terms of production costs compared to the plants put into operation until 2009.

Quality of products will match the quality of analog, produced by world leaders in the industry.

Suggested prices for the finished product:

Polyvinyl chloride - the domestic market \$ 1,300 per ton and export \$ 1,100 per tons.

Caustic soda - for internal and external market of \$ 600 per tons.

#### **4.2. Manufacturing:**

**Availability of raw materials and other project material resources, with an estimate of the price, quantity and quality:**

The basic raw material for production of caustic soda: technical salt

The basic raw material for production of PVC, VC: natural gas supplied from the network NHC "Uzbekneftegaz" chlorine.

**Characteristics suggest the installation of technology and its main parameters: the estimated cost, etc.):**

**The design capacity of the complex:**

Caustic Soda 32 000 tons / year

PVC 50 000 tons / year

**Total cost: 180.0 million dollars.**

**Consumption of energy and material resources:**

Material	Unit	Shipments	Annual expenses, th. USD
<b>Acetylene production</b>			
Natural gas	th.m <sup>3</sup>	155 250	8 581,0
Oxygen (100%)	th.m <sup>3</sup>	85 100	5 758,4
Methylpyrrolidone *	tonnes	149,5	695,8
Soda ash	tonnes	6,9	2,0
<b>Production caustic soda and chlorine</b>			
Crude salt	tonnes	50 000	1 156
Caustic soda(100% NaOH)	tonnes	1088,0	

hydrochloric acid (100% HCl)	tonnes	1312,0	
barium carbonate *	tonnes	544,0	360,9
sodium carbonate	tonnes	118,4	33,9
flocculating Adofoam	tonnes	0,3	0,9
Alpha-cellulose *	tonnes	9,6	20,6
sodium Sulfite	tonnes	48,0	22,2
Sugar	tonnes	76,8	124,7
Bags	pcs.	1312000,0	758,4
<b>Production of VCM</b>			
Acetylene	tonnes	22 440	Own production
hydrogen chloride	tonnes	32 640	Own production
catalyst HgCl <sub>2</sub> (10-12)% *	tonnes	51	71,7
absorbent carbon*	tonnes	76,5	210,0
solid caustic	tonnes	153	Own production
Liquid caustic (32%)	tonnes	1020	Own production
<b>Production of PVC</b>			
VCM	tonnes	50 125	Own production
Catalyst (C) *	tonnes	24	194,4
Catalyst (D) *	tonnes	16,5	117,2
suspending agent (F) *	tonnes	25	98,8
suspending agent (H) *	tonnes	25	100
suspending agent (I) *	tonnes	8,5	17,9
Supplement (additive)*	tonnes	3	0,9
neutralizer *	tonnes	3	10,3
inhibitor *	tonnes	0,2	0,2
Anti pollutant*	tonnes	7,5	29,3
Bags (50 kg)	pcs.	2050000	1185



Argon	Th. m <sup>3</sup>	0,6	3,5
Oxygen	Th. m <sup>3</sup>	0,6	
industrial oil	Tonnes	0,3	0,4
<b>Total raw materials and auxiliary materials:</b>			
Costs for energy and utilities			12 097,1
spare parts			1 596,7
staff salaries			2 711,0

\* imports.

The number of necessary personnel, including engineers and workers: 774 persons.

#### **4.3. Construction, reconstruction or modernization:**

The direction of investment - new construction.

Requirements for an object of industrial infrastructure.

The whole complex needs in infrastructure will be provided through the existing infrastructure of "Navoiyazot."

#### **4.4. Funding:**

Estimated project cost - 180.0 million dollars.

Estimated date of commissioning of an object - in December 2014.

The proposed scheme initiated funding for the project\*:

<b>The total project cost (including financing costs):</b>	<b>Mln. USD</b>	<b>180,0</b>
Own funds of the newly established joint venture	Mln. USD	54,0
Borrowings, including:	Mln. USD	126,0
Credits of Fund for Reconstruction and Development of the Republic of Uzbekistan;	Mln. USD	76,7
Foreign investments and loans	Mln. USD	49,3

\* Will be determined on the basis of approval of construction documents.

#### **5. Expected outcomes from the project:**

Expected annual earnings – PVC – 79,2 mln.USD. at full production capacity.

Export volume: 25 th. tonnes of PVC (27,5 mln.USD) and 12,8 th. tonnes (7,68 mln. USD) of caustic soda annual.

#### **6. Status of development and examination of project documentation:**

Developed Pre-Feasibility Study of the project, which is in the authorized bodies for examination.

**PASSPORT**  
**of investment project:**  
**"Establishment of polyvinylchloride (PVC) production complex on the basis of acetylene and chlorine and the production of caustic soda at "Navoiyazot" OJSC"**

<b>№</b>	<b>Title</b>	<b>Unit</b>	<b>Project indicator<sup>a</sup></b>	<b>Comment</b>
<b>1.</b>	Total project cost, including:	Mln. USD	180	
<b>1.1.</b>	in national currency	Mln. USD	144	
<b>1.2.</b>	in free convertible currency (FCC)	Mln. USD	36	
<b>2.</b>	Total expenditures in FCC, including:	Mln. USD	144	
<b>2.1.</b>	purchase of equipment	Mln. USD	64,8	
<b>2.2.</b>	building and assembly works	Mln. USD	50,4	
<b>2.3.</b>	Other	Mln. USD	28,8	
<b>3.</b>	Total expenditures in national currency, including:	Mln. USD	36	
<b>3.1.</b>	purchase of equipment	Mln. USD	16	
<b>3.2.</b>	building and assembly works	Mln. USD	12	
<b>3.3.</b>	Other	Mln. USD	10	
<b>4.</b>	Sources of financing:			
<b>4.1.</b>	Credits of Fund of Reconstruction and Development of the Republic of Uzbekistan	Mln. USD	76,7	
<b>4.2.</b>	foreign investments and credits, including:	Mln. USD	49,3	
-	against governmental guarantee	Mln. USD	-	
<b>4.3.</b>	Total direct foreign investments, including:	Mln. USD	-	
-	Contribution to charter capital	Mln. USD	-	
<b>4.4.</b>	internal funds	Mln. USD	54	
<b>4.5.</b>	credits of commercial banks	Mln. USD		
<b>4.6.</b>	other sources (specify)	Mln. USD	-	
<b>5.</b>	Assumed number of employees, including:	Person	774	
<b>5.1.</b>	Number of new jobs created	Person	774	
<b>6.</b>	Construction period, total	Months	36	
<b>6.1.</b>	date of work commencement	Year	2011	
<b>6.2.</b>	date of commissioning	Month, Year	december 2014	
<b>7.</b>	Project payback period, total	Years	7	
<b>8.</b>	Annual production volume of goods and services in terms of quantities, including:	tonnes	50000	PVC
		tonnes	32000	Caustic soda
<b>8.1.</b>	to export	tonnes	25000	PVC
<b>9.</b>	Annual profit volume from sold products	Mln. USD	79,2	PVC, Caustic soda
-	from export	Mln. USD	35,18	
<b>10.</b>	Expected distribution markets:			
<b>10.1.</b>	internal	%	50	PVC
			60	Caustic soda
<b>10.2.</b>	external	%	50	PVC
			40	Caustic soda