Report and Recommendation of the President to the Board of Directors

Project Number: 44944
December 2011

Proposed Loan and Political Risk Guarantee
Uz-Kor Gas Chemical LLC
Surgil Natural Gas Chemicals Project
(Uzbekistan)

This is an abbreviated version of the document approved by ADB’s Board of Directors that excludes information that is subject to exceptions to disclosure set forth in ADB’s Public Communications Policy 2011.

Asian Development Bank
CURRENCY EQUIVALENTS  
(as of 30 November 2011)

Currency Unit – sum (Sum)  
Sum 1.00 = $ 0.0006  
$1.00 = Sum 1,780.15

ABBREVIATIONS

ADB – Asian Development Bank  
EIA – environmental impact assessment  
EPC – engineering, procurement, and construction  
ESMP – environment and social management plan  
NSO – nonsovereign operations  
PRG – political risk guarantee

WEIGHTS AND MEASURES

BCMA – billion cubic meters per annum  
kilometer (1,000 meters)  
KTPA – thousand tons per annum

NOTES

(i) The fiscal year (FY) of Uz-Kor Gas Chemical ends on 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2011 ends on 31 December 2011.

(ii) In this report, "$" refers to US dollars.

| Vice-President | L. Venkatachalam, Private Sector and Cofinancing Operations |
| Director General | P. Erquiaga, Private Sector Operations Department (PSOD) |
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| | M. Pateguana, Investment Specialist, PSOD |
| | A. Porras, Safeguards Officer, PSOD |
| | B. Raemaekers, Senior Guarantees and Syndications Specialist, PSOD |
| | R. Samiano, Safeguards Officer, PSOD |
| | M. Tsuji, Principal Safeguards Specialist, PSOD |

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.
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## PROJECT AT A GLANCE

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<th>2. Project Number: 44944</th>
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### 5. Sector Classification:

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<thead>
<tr>
<th>Sectors</th>
<th>Primary</th>
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<tr>
<td>Industry and Trade</td>
<td>Larger</td>
<td>Petrochemicals</td>
</tr>
<tr>
<td></td>
<td>industries</td>
<td></td>
</tr>
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### 6. Thematic Classification:

<table>
<thead>
<tr>
<th>Themes</th>
<th>Primary</th>
<th>Subthemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic growth</td>
<td></td>
<td>Promoting economic efficiency and enabling business environment</td>
</tr>
<tr>
<td>Private sector development</td>
<td></td>
<td>Private sector investment</td>
</tr>
</tbody>
</table>

### 6a. Climate Change Impact:

- Adaptation
- Mitigation
- Not applicable

### 6b. Gender Mainstreaming:

- Gender equity theme
- Effective gender mainstreaming
- Some gender benefits
- No gender benefits

### 7. Targeting Classification:

<table>
<thead>
<tr>
<th>General Intervention</th>
<th>Targeted Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Geographic dimensions of inclusive growth</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
</tr>
<tr>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

### 8. Location Impact:

- Rural medium
- Urban low
- National high
- Regional medium


### 10. Safeguard Categorization:

<table>
<thead>
<tr>
<th>Environment</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involuntary resettlement</td>
<td>C</td>
</tr>
<tr>
<td>Indigenous peoples</td>
<td>C</td>
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</tbody>
</table>

### 11. ADB Financing:

<table>
<thead>
<tr>
<th>Sovereign/Nonsovereign</th>
<th>Modality</th>
<th>Source</th>
<th>Amount ($million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>nonsovereign</td>
<td>direct loan</td>
<td>OCR</td>
<td>125.0</td>
</tr>
<tr>
<td>Nonsovereign</td>
<td>PRG</td>
<td>OCR</td>
<td>275.0</td>
</tr>
</tbody>
</table>

### 12. Cofinancing:

<table>
<thead>
<tr>
<th>Financier</th>
<th>Category</th>
<th>Amount ($million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
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</tr>
</tbody>
</table>

### 13. Counterpart Financing: Approximately $2.6 billion in total, from an international lending group likely to include Korea Exim, KSure, China Development Bank, National Bank of Uzbekistan, and European export credit agencies.

### 14. Aid Effectiveness: Not Applicable
I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan of up to $125 million to Uz-Kor Gas Chemical LLC; and (ii) a political risk guarantee (PRG) of up to $275 million for commercial lenders to Uz-Kor Gas Chemical LLC for the Surgil Natural Gas Chemicals Project.¹

II. THE PROJECT

A. Project Identification and Description

1. Project Identification

2. The project’s transaction advisor, ING Bank N.V., London branch (ING), approached the Asian Development Bank (ADB) in July 2010 to participate as an anchor lender and catalyze commercial banks to finance the Surgil Gas Chemicals Project. ING’s objective was to structure the most commercially attractive deal for commercial launch by reaching a negotiated term sheet with ADB and finalizing the technical, commercial, and environmental and social due diligence packages based on ADB’s participation in project appraisal. Given the extensive Korean sponsorship and technical content, the Export-Import Bank of Korea and the Korea Trade Insurance Corporation have also played key roles in the term sheet negotiations and due diligence. Following completion of due diligence and finalizing the term sheet in September 2011, ING successfully launched the transaction to emerging-market-focused project finance banks, segregated into tranches covered by ADB’s PRG and the untied financing schemes of the Export-Import Bank of Korea and the Korea Trade Insurance Corporation.

3. There has been strong support of partners from the Republic of Korea in the development of Uzbek natural resources. In 2005–2006, the presidents of the Republic of Korea and Uzbekistan reached a strategic cooperation agreement, which lays the groundwork for a number of Uzbek–Korean partnerships in the Uzbek gas and chemical industries. These include the Surgil project—a joint venture between the state-owned oil and gas company National Holding Company “Uzbekneftegaz” (UNG) and a Korean consortium (Kor-Uz Gas Chemical Investment Ltd)—to develop the Surgil–North Aral gas and condensate field and a gas-to-chemical process plant. The project also benefits from a pioneering Investment Agreement (IA) between the Government of the Republic of Uzbekistan, Kor-Uz Gas Chemical Investment Ltd, Uz-Kor Gas Chemical and UNG, which enables the project to borrow on international project finance terms and conduct business according to global commercial standards.

4. As the second-largest gas producer in the Commonwealth of Independent States behind the Russian Federation, with total reserves of 59.4 trillion cubic feet,² Uzbekistan is also well-positioned with its low-cost feedstock supply to establish a strong chemical industry. Despite this potential and the rate of growth of the commodity petrochemical market in the region, Uzbekistan has made only a limited foray into the market.³

5. The project will be the largest oil and gas project undertaken in Uzbekistan and one of the largest multisource financing schemes in Central Asia to date. The project will provide substantial benefits to Uzbekistan by enhancing its established gas extraction and processing

¹ The design and monitoring framework is in Appendix 1.
³ UNG currently operates a small-capacity polyethylene manufacturing plant, which, when the Surgil project is complete, will be switched to a different polyethylene product for use in the domestic market.
industry with the capability to convert a portion of the gas into higher-value chemical commodities to be sold into high-demand manufacturing in the region. ADB’s participation, particularly through leading the due diligence as a direct lender, ensures that the project delivers on environmental performance—a key stakeholder concern in all chemical industry projects. ADB, through its commercial cofinancing products, can also help mobilize significant foreign direct investment in Uzbekistan’s private sector and eventually ease the burden on the Government of Uzbekistan in taking sponsor roles in industrial projects.

2. Project Design

6. The project is located approximately 1,300 kilometers (km) from Tashkent in the Ustyurt region of Karakalpakstan in northwestern Uzbekistan.

7. The integrated gas-to-chemical project consists of
   (i) upstream development and operations at the Surgil Field involving drilling new production wells and constructing upstream infrastructure including expanding the complex gas treatment unit to supply up to 3 billion cubic meters per annum (BCMA) of gas and 115 thousand tons per annum (KTPA) of condensate;4
   (ii) downstream development and operations at the gas processing site, located approximately 115 km southwest of the Surgil Field, involving constructing a new gas separation plant, an ethylene cracker,5 a high-density polyethylene plant, a polypropylene plant, and associated utilities and supporting facilities; and
   (iii) associated gas pipelines, product transportation, and water supply infrastructure; the project also includes three 35-megawatt gas turbine generator sets for power supply independent of the national grid.

8. The project will source gas from its own Surgil Field and will also purchase gas, through a gas supply agreement with UNG. Condensate supply (another raw material required for the polymer process) is sourced from the Surgil field and through supply contracts with UNG.

9. The upstream and downstream components of the project will be connected by two parallel 115-km pipelines constructed to supply gas and condensate from the Surgil Field to the gas separation plant. The process technology will be supplied by each of the downstream engineering, procurement, and construction (EPC) contracts and will be fully aligned with technology license arrangements, providing the project with process performance guarantees and ongoing technical support from the process licensors.

3. The Borrower and/or Sponsor

10. Uz-Kor Gas Chemical is a joint-venture company which is 50% owned by Uzbekistan’s state-controlled UNG and 50% by a consortium of Korean companies: Honam Petrochemical Corporation (45% of the Korean consortium), Korea Gas Corporation (45%), and STX Energy (10%). Uz-Kor Gas Chemical was incorporated in Uzbekistan in May 2008 as a project company to build, own, and operate the project. The companies comprising the Korean consortium were chosen on a selective basis from companies within the Republic of Korea with relevant commercial experience to implement the project. UNG was founded in 1992 as the

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4 Condensate is a mixture of hydrocarbon liquids present in the gaseous state as natural gas is produced. It is composed of C5 and heavier hydrocarbons.
5 Cracking is a high-temperature process that splits ethane and propane (paraffins) carbon-hydrogen bonds into double-bonded ethylene and propylene (olefins) and aromatics. Olefins are highly reactive and are suitable for processing into higher-value chemical derivatives.
wholly state-owned holding company of Uzbekistan’s oil and gas industry. UNG is the second-largest natural gas producer in the Commonwealth of Independent States, after Gazprom.

B. Development Impact, Outcome, and Outputs

1. Impact

11. The project adds incremental economic value to the output of three natural-gas fields by processing an extracted commodity to two value-added streams: purified methane for commercial use, and key chemical intermediate polymer products for downstream plastics and textiles manufacturing. The exported chemicals increase the proportion of value-added products in Uzbekistan’s total exports, which increases Uzbekistan’s economic share in the resource. The demonstration effect of a large-scale project, with application of the Investment Agreement, increases the opportunities for further foreign direct investment in Uzbekistan’s private sector large-scale manufacturing industry. This impact will have been largely facilitated by ADB’s early involvement in structuring the due diligence of the project and in enhancing the attractiveness of the project to commercial financing sources.

2. Outcome

12. The project's outcome is a significant expansion in the value-added chemical process industry in Uzbekistan and the increase in value of a key natural resource. As a result, 3,373 KTPA of natural gas will be processed into 387 KTPA of high-density polyethylene, 83 KTPA of polypropylene, and 2,568 KTPA of methane-rich processed gas (footnote 1). The project will boost long-term employment by adding approximately 3,500 direct jobs during construction and 1,090 during operations, in addition to indirect employment opportunities. This outcome is significant as the Karakalpakstan region of Uzbekistan is characterized by high unemployment and poverty and the project will directly address this through hiring programs that will recruit directly from the Karakalpakstan community.

3. Outputs

13. The project's output is a facility constructed and commissioned as envisaged in the project documents and in compliance with ADB environmental and social safeguards. The output is readily verifiable by performance demonstration required under the EPC contracts and technology licenses and the measurement of EPC contract milestones.

C. Alignment with ADB Strategy and Operations


14. ADB's Strategy 2020\(^6\) emphasizes ADB’s support for efficient energy infrastructure, improving regional cooperation and intraregional supply chains, forging stronger financial links with Asian countries, and bridging the technology gap. The project supports these objectives by developing gas fields where the outputs will be separated into fuel and higher-value chemical commodity products. The project—and its focus on export to regional demand centers in Central Asia, the Russian Federation, and Turkey—will demonstrate Uzbekistan’s commitment

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to its structural reforms initiatives in strategic sectors\textsuperscript{7} and in establishing bilateral trade agreements.\textsuperscript{8}

2. Consistency with Country Strategy

15. The country strategy and program, 2006–2010 seeks to promote development in sectors where Uzbekistan has a comparative advantage, i.e., natural gas and manufacturing.\textsuperscript{9} Demonstration of the Investment Agreement structure supports the strategy objective of improving the business environment through improved financial norms and enabling investments for sustained gross domestic product growth. The project leverages the country’s comparative advantage for increasing the value-addition of exports and upgrading the practices and skills in its large-scale manufacturing industry.

D. Project Cost and Financing Plan

16. The total project cost is approximately $4.0 billion, to be funded 65% with debt and 35% with equity.

E. Implementation Arrangements

17. Table 1 summarizes the implementation arrangements of the project.\textsuperscript{10}

\begin{table}[ht]
\centering
\begin{tabular}{|l|p{0.7\textwidth}|}
\hline
\textbf{Aspects} & \textbf{Arrangements} \\
\hline
Regulatory Framework & Investment Agreement which grants the project rights to conduct business under terms suitable for international project finance. \\
\hline
Management & Project SPV: Uz-Kor Gas Chemical is a limited-liability company organized and existing under the laws of Uzbekistan. Uz-Kor management has been appointed by experienced executives, mainly from Honam, KOGAS, and UNG. \\
\hline
Implementation Period & Drawdown of ADB loan in tranches over FY2012–FY2015 as upstream and downstream EPC costs are incurred. The total duration of the project implementation is anticipated to be 43 months from signing of the EPC contract to the start of commercial operations. \\
\hline
Construction Arrangements & \\
\hline
Type of Arrangement & Lump sum engineering, procurement, and construction: The project will manage interfaces between the four (one upstream and three downstream) EPC contracts through to project completion. Honam will act as downstream project management contractor and will assign experienced experts to this project management role via a project management group contract with Uz-Kor, which further ensures mitigation of the contract interface risk to the project management. \\
\hline
Contractor & The upstream preproject completion date EPC contract will be performed \\
\hline
\end{tabular}
\caption{Summary of Implementation Arrangements}
\end{table}

\textsuperscript{7} Trend News Agency. 2010. \textit{Uzbekistan to Develop Industrial Development Program to 2016}. Tashkent (13 September).

\textsuperscript{8} Trend News Agency. 2010. \textit{Azerbaijani-Uzbek Intergovernmental Commission Identifies Prospects of Bilateral Cooperation}. Tashkent (23 September).


\textsuperscript{10} Details of Implementation Arrangements (accessible from the list of linked documents in Appendix 2).
by UNG. The downstream work is divided into three lump-sum EPC contracts: (i) utilities and offsite works (Hyundai Engineering Company), (ii) ethylene cracker (GS Engineering and Construction), and (iii) downstream gas separation plant and polymer plants (Samsung Engineering).

<table>
<thead>
<tr>
<th>Operations Arrangements</th>
<th>Gas offtake: UNG is the exclusive buyer of processed and unprocessed gas from the project for 30 years. Polymer offtake: The sponsors are the sole offtakers of polymers from the project, with some offtake contracts assigned to commodities trading organizations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Structure</td>
<td>Operation and maintenance will be conducted by Uz-Kor, with the main project sponsors (UNG, Honam, and KOGAS) seconding experienced personnel and providing technical resources to a dedicated operation and maintenance team within Uz-Kor. UNG will operate and maintain the upstream facilities prior to commercial start-up of the downstream plants.</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Key performance indicators, including output and outcome indicators, will be reported by Uz-Kor.</td>
</tr>
</tbody>
</table>

ADB = Asian Development Bank, EPC = engineering, procurement, and construction, KOGAS = Korea Gas Corporation, TCM = thousand cubic meters, UNG = NHC “Uzbekneftegaz”
Sources: ADB and International Netherlands Group.

III. THE PROPOSED ADB ASSISTANCE

A. The Assistance

18. The proposed ADB loan of up to $125 million to finance the development of the project will be provided from ADB’s ordinary capital resources without government guarantee. The ADB loan will have a maximum tenor of up to 13 years, including a grace period of up to 5.5 years, and will be repaid semiannually.

19. The proposed PRG of up to $275 million of principal, interest and fees will cover certain risks under loans from commercial lenders to Uz-Kor Gas Chemical to finance the project. The PRG will have a tenor of up to 13 years and match the original tenor of the commercial loans covered by the PRG. Under the PRG, ADB will cover the risks of currency inconvertibility, non-transferability of funds, war, terrorism and political violence, and breach of contract (for which there must be default on an arbitral award or denial of recourse) in respect of the loans of commercial lenders. The guaranteed lenders must be eligible beneficiaries under ADB’s policy related to credit enhancement.

B. Value-Added by ADB Assistance

20. ADB is a cornerstone lender to the project and has played a key role in the successful commercial syndication. Petrochemical-focused commercial banks may take up to the full amount of the $275 million PRG-covered tranche, introducing a level of financial and commercial value to the project that may otherwise have been unavailable to a large-scale financing scheme in Central Asia. Beyond the project, ADB’s role in this pioneering financing should have a legacy effect on future foreign direct investment in Uzbekistan’s private sector.
21. ADB’s participation assures that environmental and social mitigation and enhancement measures will be implemented effectively. By following ADB’s safeguards and social policies (including the application of World’s Bank Group environmental, health, and safety guidelines) will demonstrate the application of international environmental and social standards and best practices to Uzbekistan’s manufacturing sector and will raise performance standards in occupational health and safety, emissions and effluent control and measurement, emergency response techniques, and community engagement.

C. Risks

22. The deal team assessed the following key risk issues during due diligence. Independent advisors have indicated that risks are mitigated to the extent of, and in some cases in excess of, industry best practice.

   (i) Engineering, procurement, and construction risk. Construction risk is mitigated by the presence of strong EPC contracts with leading EPC firms. The sponsors are also providing strong execution support.

   (ii) Market/Offtake risks. The project is competitive with other marketers of polymers because of its unique advantage of captive gas supply as a raw material instead of purchasing ethylene raw material on the commodities market.

   (iii) Gas supply risk. Gas reserves from the Surgil field and UNG national supply are considered adequate for the project throughout the tenors of the project’s loans.

   (iv) Legal and regulatory risk. The transaction is exposed to legal and regulatory risk, which is perceived to be high in Uzbekistan. Foreign investment in Uzbekistan is relatively new (as is project financing) with few precedents.

   (v) Extractive Industries Transparency Initiative. Uzbekistan has not implemented the Extractive Industries Transparency Initiative and therefore does not publish a report detailing revenues from extracted resources and discrepancies in reported volumes and revenues from extractive companies. The project, however, falls outside of the scope of EITI as it does not sell natural resources (unprocessed gas) to the export markets.

IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

23. Safeguards. The project is classified as category A in terms of environmental impacts and triggers ADB’s safeguard requirements on environmental assessment and planning for pollution prevention and abatement, biodiversity conservation, and occupational and community health and safety. An environmental and social impact assessment was carried out and an environmental and social management plan (ESMP) has been prepared in line with national laws and regulations and ADB’s Safeguard Policy Statement, including International Finance Corporation’s Environmental, Health, and Safety Guidelines. There are no habitats with high

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11 Safeguards and Social Dimensions Summary, and Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).
biodiversity value within the project area of influence. Sudoch’ye Lake State Reserve is located upstream of the project by a distance of at least 50 km from the Surgil complex gas treatment unit and 30 km from the Ustyurt gas chemical complex and therefore the project will not have direct impacts on this protected site.

24. Potential indirect impacts during construction that may be caused by the influx of construction workers will be avoided and minimized through strict implementation of education programs and hunting bans. Potential health impacts and pollution will be minimized and mitigated through proper implementation of the ESMP. Uz-Kor, as a recently formed organization, is committed to sound environment and social management through setting up an environmental health safety and social management system, including a grievance mechanism, to be in place prior to the commencement of construction and operations. Uz-Kor has appointed an environmental and social manager since July 2011 at the head office in Tashkent to be supported by a qualified and experienced team at the head and field offices to oversee the ESMP implementation and act as main point of contact with the EPC contractor. The cost of mitigation measures, monitoring and training activities has been estimated and included in the project budget. Consultations were conducted with local residents and district government officials and information on the project, ESMP implementation, availability of jobs, local recruitment policy, HIV/AIDS awareness program was disclosed and discussed in Akchalak, Muynak, and Kungrad settlements in July 2010, March 2011 and July 2011. Issues and concerns raised and responses made by Uz-Kor during the consultations were documented in the environmental and social impact assessment which was disclosed on the ADB website in August 2011. Uz-Kor has appointed a community liaison officer who will be the local contact for enquiries and complaints.

25. The project is classified as C for involuntary resettlement and indigenous peoples. The project will be constructed in the uninhabited bed of Aral Sea and state-owned semi-arid desert lands in the Ustyurt Plateau. All prior land allocations did not entail involuntary resettlement impacts nor affect any indigenous peoples. The population in the project area is comprised of Karakalpaks, Uzbeks, Kazakhs, Russians, Tatar, Koreans, Turkish, and others. No adverse project impacts on these ethnic groups are expected and none of these ethnic groups are considered indigenous peoples under the criteria of ADB’s Safeguard Policy Statement.

26. **Other social dimensions.** The project is expected to provide employment and business opportunities to the local community and income (through taxes) to the local governments. Where it is justified in respect of considerations of cost and quality, Uz-Kor and its contractors will adopt a quota for women and ensure that unskilled labor workforce is proportionally distributed based on ethnic distribution in the region/district. Uz-Kor and its contractors will comply with ADB’s Social Protection Strategy including internationally recognized core labor standards. The Project will also address key issues facing local women by providing employment and business opportunities and improving local infrastructure which will improve the living conditions of women in Akchalak settlement.

B. **Anticorruption Policy**

27. Uz-Kor has been advised of standardized approach to anticorruption and its policy of implementing best international practice relating to the combating of money laundering and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate anticorruption provisions and remedies for ADB in the event of noncompliance.

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C. Investment Limitations

28. The proposed loan and PRG are within the country, industry, group, and single project exposure limits for nonsovereign investments.

D. Assurances

29. Consistent with the Agreement Establishing the Asian Development Bank (the Charter)\textsuperscript{13}, the Government of Uzbekistan will be requested to confirm that it has no objection to the proposed assistance to Uz-Kor Gas Chemical LLC. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by ADB’s Board of Directors.

V. RECOMMENDATION

30. I am satisfied that the proposed loan and political risk guarantee would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

(i) a proposed loan of up to $125,000,000 to “Uz-Kor Gas Chemical LLC” for the Surgil Natural Gas Chemicals Project in Uzbekistan from ADB’s ordinary capital resources; and

(ii) a political risk guarantee of up to $275,000,000 to commercial lenders to “Uz-Kor Gas Chemical LLC” for the Surgil Natural Gas Chemicals Project in Uzbekistan from ADB’s ordinary capital resources, with such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

Haruhiko Kuroda
President

22 December 2011

\textsuperscript{13} ADB. 1966. \textit{Agreement establishing the Asian Development Bank.} Manila.
## DESIGN AND MONITORING FRAMEWORK

<table>
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<th>Design Summary</th>
<th>Performance Targets and Indicators with Baselines</th>
<th>Data Sources and Reporting Mechanisms</th>
<th>Assumptions and Risks</th>
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</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td>By 2016, 1.5% of Uzbekistan’s exports are polyolefins, up from virtually zero in 2010&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Statistics and information disclosed by Uzbekistan commerce authorities</td>
<td>Assumption</td>
</tr>
<tr>
<td></td>
<td>Replication of the investment agreement architecture on at least one other foreign direct investment by 2017</td>
<td>Import classification statistics from customer countries</td>
<td>Stable and consistent regulatory policies for private sector industry</td>
</tr>
<tr>
<td></td>
<td>Market share of Uzbek polymers (HDPE and polypropylene only) in key target markets of the Russian Federation (3%), other Commonwealth of Independent States (8%), Turkey (7%), and the People’s Republic of China (1%) by 2015 from virtually zero in 2010</td>
<td>Independent market consultant reports</td>
<td>Risk</td>
</tr>
<tr>
<td></td>
<td>Upstream output from Surgil Field</td>
<td>Company’s reports on operations</td>
<td>Demand from regional manufacturers is less than expected</td>
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<tr>
<td></td>
<td>HDPE and polypropylene is sold to the international and domestic markets</td>
<td>Statistics and information disclosure by press articles, trade journals, and market consultants</td>
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<td></td>
<td>Methane-rich processed gas is sold to UNG</td>
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<td>Creation of 1,090 jobs from 2016 onwards (operations phase)</td>
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<td><strong>Outcome</strong></td>
<td></td>
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<td>Assumptions</td>
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<td>Plant achieves anticipated capacity</td>
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<td>Products are sold on the open market at forecasted prices and volumes</td>
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<td>New competitive manufacturers</td>
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<td>Downturn in global or regional demand for plastics products</td>
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### Design Summary

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Performance Targets and Indicators with Baselines</th>
<th>Data Sources and Reporting Mechanisms</th>
<th>Assumptions and Risks</th>
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<tr>
<td>1. The project is built and commissioned as planned</td>
<td>Project commissioned in 2015&lt;br&gt;Project fully operational by 2017&lt;br&gt;3,500 construction-phase jobs created during 2012–2015&lt;br&gt;Unskilled jobs distributed proportionally according to ethnic population of the region or district&lt;br&gt;ESMP is adopted and implemented during construction (2012–2015) and operations (2015–2040)</td>
<td>Quarterly and annual financial statements by the company&lt;br&gt;Quarterly construction progress reports by lenders’ independent engineer&lt;br&gt;Uz-Kor and external monitor’s semiannual environmental and social monitoring reports during construction and annually during operations&lt;br&gt;Warranty and demonstration reports by owner&lt;br&gt;ADB annual reviews and project completion report&lt;br&gt;Annual review of ESMP implementation by lenders’ consultant</td>
<td>EPC contracts are coordinated and risks are adequately mitigated&lt;br&gt;Company has access to adequate development funds and working capital&lt;br&gt;Natural gas reserves exist as anticipated</td>
</tr>
<tr>
<td>2. Compliance with ADB policies on environment, health and safety, social safeguards, and internationally recognized core labor standards</td>
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### Activities with Milestones

<table>
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<tr>
<th>Activities</th>
<th>Milestones</th>
<th>Consultants</th>
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<td>1.1.</td>
<td>ADB mandate letter – December 2010</td>
<td>Aecom (environment and social)</td>
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<td>1.2.</td>
<td>Commercial bank launch – September 2011</td>
<td>DeGolyer &amp; MacNaughton (gas reserves)</td>
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<td>1.3.</td>
<td>ADB loan commitment by Q1 2012</td>
<td>Ernst &amp; Young (tax, integrity)</td>
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<td>1.4.</td>
<td>ADB loan agreement signed by Q2 2012</td>
<td>IHS CERA (gas market)</td>
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<td>1.5.</td>
<td>EPC contract main text signed by Q4 2011</td>
<td>JLT (insurance)</td>
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<td>1.5.</td>
<td>Project commissioned by Q1 2015</td>
<td>Nexant (technical, petrochemical market)</td>
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<td>2.</td>
<td>Fully operational by 2017</td>
<td>Norton Rose (legal)</td>
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<td>3.1</td>
<td>Commencement of ESMP implementation by Q2 2012</td>
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<td>3.2</td>
<td>Adoption of workers code of conduct, recruitment and procurement policy, and setting of quota set for job and business opportunities for women before start of main construction activities (Q2 2012)</td>
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<td>3.3</td>
<td>Establishment of grievance mechanism, recruitment of Uz-Kor environment and social staff and environment and social external monitor before start of main construction activities (Q2 2012)</td>
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<tr>
<td>3.4</td>
<td>ESMP implementation evaluation report by 2016</td>
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</tbody>
</table>

ADB = Asian Development Bank; ECA = export credit agency; EPC = engineering, procurement, and construction; ESMP = environmental and social management plan; HDPE = high-density polyethylene; KTPA = kiloton per annum, Q = quarter.