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Report No: 101736-UA

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

FOR A

PROPOSED IBRD GUARANTEE

IN THE AMOUNT OF THE EURO EQUIVALENT OF US$ 500 MILLION

IN SUPPORT OF A

UKRAINE GAS SUPPLY SECURITY FACILITY PROJECT

TO BE IMPLEMENTED BY

PUBLIC JOINT STOCK COMPANY
“NATIONAL JOINT STOCK COMPANY NAFTOGAZ OF UKRAINE”

September 21, 2016

Energy and Extractives Global Practice
Belarus, Moldova and Ukraine Country Unit
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective September 14, 2016)

| | | |
|---|---|---|
| Currency Unit | = | Ukrainian Hryvnia (UAH) |
| UAH 26.34 | = | US$1 |
| US$ 0.038 | = | UAH 1 |

FISCAL YEAR

July 1, 2016 – June 30, 2017

ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| bcm | Billion cubic meter |
| CPS | Country Partnership Strategy |
| CTF | Clean Technology Fund |
| DFI | Development Financial Institution |
| DPL | Development Policy Loan |
| DSCR | Debt Service Coverage Ratio |
| EBRD | European Bank for Reconstruction and Development |
| EFET | European Federation of Energy Traders |
| EFF | Extended Fund Facility |
| EHS | Environment, Health and Safety |
| EIB | European Investment Bank |
| EITI | Extractive Industries Transparency Initiative |
| EU | European Union |
| FDI | Foreign Direct Investment |
| GDP | Gross Domestic Product |
| GSA | Gas Supply Agreement |
| IFC | International Finance Corporation |
| IFI | International Financial Institution |
| IMF | International Monetary Fund |
| KYC | Know-Your-Customer |
| L/C | Letter of Credit |
| MoF | Ministry of Finance |
| NDA | Non-Disclosure Agreement |
| VAT | Value Added Tax |
| y/y | Year-over-year |

| | |
|---|---|
| Regional Vice President: | Cyril Muller |
| Country Director: | Satu Kahkonen |
| Acting Senior Global Practice Director: | Anna Bjerde |
| Practice Manager, Energy | Ranjit Lamech |
| Practice Manager, Guarantees: | Pankaj Gupta |
| Task Team Leaders: | Stephanie Gil, Richard MacGeorge |

**UKRAINE**
**Ukraine Gas Supply Security Facility**

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UKRAINE

UKRAINE GAS SUPPLY SECURITY FACILITY

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

ENERGY AND EXTRACTIVES GLOBAL PRACTICE

| | |
|---|---|
| Date: September 15, 2016 | Team Leader: Stephanie Gil; Richard Bernard MacGeorge |
| Country Director: Satu Kahkonen | Environmental category: B |
| Practice Manager/Acting Director: Ranjit J. Lamech & Pankaj Gupta / Rohit Khanna | Joint IFC: No |
| Project ID: P155111 | Joint Level: No |
| Lending Instrument: IPF / Guarantee | |

**Project Financing Data**

[ ] Loan [ ] Credit [ ] Grant [X] Guarantee [ ] Other:

For Loans/Credits/Others:
Total Bank financing (US$m.): An IBRD Guarantee of the Euro equivalent of US$500 million, at an exchange rate to be fixed on a date mutually agreed with the funding banks (**Ref. PAD IV.A**)
Proposed terms: An availability period of 2 years with a Guarantee Expiry Date of 4 years.

**Financing Plan (US$m)**

| Source | Local | Foreign | Total |
|---|---|---|---|
| Borrower | 0.00 | 0.00 | 0.00 |
| Citibank N.A. and Deutsche Bank AG, London Branch – revolving facility guaranteed by IBRD (revolving three times) | 0.00 | 1,500.00 | 1,500.00 |
| Total: | 0.00 | 1,500.00 | 1,500.00 |

**Borrower:**
Naftogaz
6, B. Khmelnytskogo Str.
Kyiv
Ukraine

**Guarantor:**
Ministry of Finance
11, Mezhygirska Str.
Kyiv
Ukraine
**Project Sponsor:**
n/a

**Content**

| | | | |
|---|---|---|---|
| **For Guarantees:** | **[ ] Loan Guarantee [X] Payment Guarantee [ ] Both Loan Guarantee & Payment Guarantee** | | |
| **Proposed Coverage:** | The IBRD guarantee would backstop the failure by Naftogaz to repay a financial institution amounts drawn by, or disbursed to, gas suppliers to Naftogaz on account of payments due by Naftogaz under eligible Gas Supply Agreements. | | |
| **Nature of Underlying Financing:** | Letter of Credit / Loan disbursements from financial institutions. | | |
| **Terms of Financing for IBRD/IDA Guarantee:** | **Principal Amount (US$m):** | The Euro equivalent of US$500.00 million (**Ref. PAD IV.A**) | |
| | **Final Maturity:** | Four years. | |
| | **Amortization Profile:** | Will reflect amortization of guaranteed commercial financing in years 3 and 4. | |
| | **Grace Period:** | none | |
| **Financing available without Guarantee:** | **[ ] Yes [X] No** | | |
| **If Yes, estimated Cost or Maturity:** | n/a | | |
| **Estimated Financing Cost or Maturity with Guarantee:** | n/a | | |
| **Bank Group Participation:** | **[ ] IFC [ ] MIGA**<br>***On December 17, 2015, the IFC Board approved a US$200 million facility which would provide parallel support for gas supplies to Naftogaz.*** | | |

| **Estimated disbursements (Bank FY/US$m)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| FY | 16 | 17 | 18 | 19 | 20 | | | | |
| Annual | n/a | n/a | n/a | n/a | n/a | | | | |
| Cumulative | n/a | n/a | n/a | n/a | n/a | | | | |
| Project implementation period: Start October 18, 2016 End: January 18, 2020<br>Expected effectiveness date: November 25, 2016<br>Expected closing date: November 25, 2020 | | | | | | | | | |

| | |
|---|---|
| Does the project depart from the CAS in content or other significant respects? ***Ref. PAD I.C.*** | [ ]Yes [X] No |
| Does the project require any exceptions from Bank policies?<br>***Ref. PAD VI.G.***<br>Have these been approved by Bank management?<br>Is approval for any policy exception sought from the Board? | <br>[ ]Yes [X] No<br>[ ]Yes [X] No<br>[ ]Yes [X] No |
| Does the project include any critical risks rated "substantial" or "high"?<br>***Ref. PAD V.A.*** | [X]Yes [ ] No |
| Does the project meet the Regional criteria for readiness for implementation? ***Ref. PAD IV.A.*** | [X]Yes [ ] No |

| |
|---|
| Project development objective ***Ref. PAD II.A., Technical Annex 1***<br>The Project's Development Objective is to enhance Naftogaz's ability to increase Ukraine's security of gas supply, by facilitating access to cost-effective financing and improving the terms of the gas supply contracts supported under the Project. |

| |
|---|
| Project description *[one-sentence summary of each component]* ***Ref. PAD III.A.***<br>The Project has one component, which a mechanism to provide revolving financing for Naftogaz's gas purchases. The instrument designed to allow for the component to be implemented is a Guarantee instrument in the amount of the Euro equivalent of US$500 million (**Ref. PAD IV.A**). |
| Which safeguard policies are triggered, if any? ***Ref. PAD VI.F., Technical Annex 2***<br>No safeguard policies are triggered. Applicable Performance Standards are PS1: Assessment of management and social risks and impacts; PS2: Labor and working conditions; PS3: Resource efficiency and pollution prevention; and PS4: Community health, safety and security. |
| Significant, non-standard conditions, **if any**, for:<br>***Ref. PAD III.A., Technical Annex 2***<br><br>Loan/credit effectiveness:<br>The guarantee will contain conditions which are customary to guarantee operations.<br><br>Covenants applicable to project implementation:<br>The legal agreements will contain covenants which are customary for guarantee operations. In addition, the following specific covenants are foreseen:<br><br>Under the Indemnity Agreement, Ukraine will covenant:<br>(i) Not to permit certain actions by Naftogaz (including restructuring of Naftogaz) without IBRD's prior written consent (Naftogaz Covenant);<br>(ii) To pay any outstanding legal fees and expenses incurred by IBRD not previously reimbursed by Naftogaz;<br>(iii) To make certain payments on Naftogaz's behalf, as may be required under the Indemnity Agreement.<br><br>Under the Cooperation Agreement, Naftogaz will covenant to:<br>(i) Comply with all its obligations under the transaction documents, including its obligation to comply with the Naftogaz Covenant and pay any outstanding legal fees and expenses incurred by IBRD;<br>(ii) Obtain IBRD's consent prior to agreeing to any change to any transaction document which would materially affect IBRD or prior to agreeing to its restructuring;<br>(iii) Provide certain notices to IBRD;<br>(iv) Cooperate with IBRD and furnish all such information related to such matters as IBRD shall reasonably request;<br>(v) Promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters; and<br>(vi) Comply with certain account management obligations. |

| **Practice Area/Cross Cutting Solution Area** |
|---|
| Practice Area: Energy & Extractives |
| Cross Cutting Areas: |

| **Sectors / Climate Change** | | | | |
|---|---|---|---|---|
| Sector (Maximum 5 and total % must equal 100) | | | | |
| Major Sector | Sector | % | Adaptation Co-benefits % | Mitigation Co-benefits % |

| | | | | |
|---|---|---|---|---|
| Energy and mining | Oil and gas | 90 | 100 | 100 |
| Industry and trade | General industry and trade sector | 10 | 0 | 0 |

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

| **Themes** | | |
|---|---|---|
| Theme (Maximum 5 and total % must equal 100) | | |
| Major Theme | Theme | % |
| Trade and integration | Trade facilitation and market access | 100 |

# I. STRATEGIC CONTEXT

## A. Country Context

1. **Ukraine is facing unprecedented challenges – a major economic and financial crisis compounded by a protracted conflict in the East.** The year 2014 witnessed several momentous events: the "Maidan" uprising that led to the ousting of the previous President, Presidential elections in May, Parliamentary elections in October, and conflict in the East. In March 2014, the Autonomous Republic of Crimea and City of Sevastopol held referenda to join the Russian Federation, which were widely criticized and declared as "having no validity" in the UN General Assembly resolution 68/262[1]. The new Government that took office in April has a mandate for reforms but faces formidable challenges: containing conflict and restoring peace in the East; ensuring macroeconomic stability by containing the fiscal deficit and safeguarding the banking sector; supporting economic recovery and restoring growth; improving social services; and reducing deepseated corruption while contending with powerful vested interests that continue to oppose reforms.

2. **The economy contracted sharply in 2014 and 2015 because of the conflict in the East, an unfavorable external environment, and structural bottlenecks.** The conflict in the East has led to disruption in supply and distribution chains, while confidence in the overall economy has been undermined by both the conflict and structural bottlenecks. In addition, a drop in global commodity prices resulted in a deterioration of Ukraine's terms of trade. As a result, real GDP contracted by 6.8 percent in 2014 and even more sharply by 10 percent in 2015. The currency depreciated by about 70 percent since 2014, which together with increases in utility tariffs, pushed 12-month consumer price inflation to 43.3 percent y/y at the end of 2015.

3. **These developments threaten to reverse some of the gains Ukraine made in earlier years in reducing poverty and boosting shared prosperity.** Poverty is estimated to have increased in 2015. Disposable incomes have contracted significantly from the deep recession, with both labor and non-labor incomes contracting in 2015 in real terms. As a result, the poverty rate (under US$5/day in 2005 PPP) is estimated to have increased from 3.3 percent in 2014 to 5.8 percent in 2015, while moderate poverty (World Bank national methodology for Ukraine) is estimated to have increased from 15.2 percent in 2014 to 22.2 percent in 2015. Labor market conditions worsened, with real wages down by 13 percent y/y in December 2015 and unemployment remaining elevated at 9.5 percent at end 2015. Poor households were affected by the increase in energy prices in 2015, with the new means-tested housing utility subsidy program partly mitigating the impact.

4. **The authorities adopted decisive policies to reduce fiscal and external imbalances.** Despite revenue losses from Donetsk and Luhansk, the headline fiscal deficit was reduced to 1.1 percent of GDP in 2015 from 4.5 percent in 2014, due to tight controls on spending and higher inflation. In addition, the Naftogaz deficit was reduced to 0.9 percent of GDP in 2015 from 5.6 percent in 2014 on the back of tariff increases and lower prices of imported gas. In November 2015, Ukraine successfully restructured about US$19 billion of its public external debt. As a

[1] Crimea accounted for about 3 percent of GDP and 4.3 percent of Ukraine's average annual population in 2013.

result of these developments, public and publicly guaranteed debt stabilized at 80 percent of GDP in 2015, up from 70 percent in 2014. In parallel, currency depreciation, recession, and administrative controls compressed imports and narrowed the current account deficit to 0.2 percent of GDP in 2015 from 3.5 percent in 2014. Official financing amounted to US$8.5 billion in 2015 and helped support private debt repayments and an increase in international reserves to US$13.3 billion at end-2015, equivalent to 3.5 months of imports.

5. **The economy has stabilized, growing by 0.8 percent in the first half of 2016, compared to a contraction of 16 percent in the first half of 2015, but significant recovery and growth have not yet taken hold except in select sectors.** The bold reforms of 2014-2015 and a de-escalation of the conflict in September 2015 helped to stabilize confidence. As a result, real GDP has stabilized, with very weak recovery (0.8 percent growth y/y) in the first half of 2016, compared to contraction of 16 percent y/y in the first half of 2015. Initial signs of rebound in select sectors appeared in the first half of 2016, with growth of 5.0 percent y/y in manufacturing, 5.5 percent y/y in domestic trade, and 4.0 percent y/y in transport and storage. This represents the first half year of growth in these key sectors since 2014. However, significant weaknesses remain in other parts of the services sector, while agriculture contracted mildly by 0.3 percent in the first half of 2016. Broad-based recovery and growth have been held back by a number of factors, including weak external demand, the continuing conflict in the East of Ukraine, and limited reform momentum, all of which have held back a strong turnaround in investor confidence and productivity. Although some reforms have advanced in the last few months, a broad-based turnaround in reform momentum has not yet replaced the slowdown in reforms since September 2015.

6. **Prospects for economic recovery remain uncertain and depend on whether reforms on multiple fronts can be advanced in the difficult internal and external environment.** If the conflict does not escalate further and progress is made on reforms, a gradual economic recovery is expected, with growth of 1 percent in 2016 and 2 percent in 2017. The real depreciation coupled with efforts to tap the European Union market are expected to support exports and tradable sectors. Furthermore, improved expenditure efficiency should create fiscal space to unlock public investment. Continued banking sector reforms should also permit a gradual resumption of lending. In the medium term, growth could pick up to 3-4 percent. The outlook is subject to serious risks, including an escalation of the conflict, further deterioration in the external environment, and difficulty to advance reforms.

7. **The fiscal outlook remains challenging and will require a systematic fiscal consolidation effort grounded in structural reforms.** In light of lower revenues and higher spending, the fiscal deficit, including Naftogaz, is projected at 4 percent of GDP in 2016, with public and publicly guaranteed debt rising further to 90.2 percent of GDP. Going forward, to maintain macroeconomic stability and gradually reduce public debt, the fiscal framework targets a reduction of the deficit to 2.6 percent of GDP by 2018. While fiscal consolidation in 2014-15 has drawn on tight spending controls across the board and higher energy tariffs, the consolidation going forward will need to be rooted in deep structural reforms to manage the largest fiscal risks arising from weak tax administration, a narrow tax base, and the large and inadequate pensions system; create fiscal space for more effective public investment; and improve the efficiency and effectiveness of health, education, and social assistance.

8. **In line with the projected gradual economic recovery, poverty is expected to decline gradually in 2016-2018, although remaining above the level of 2014.** Fiscal consolidation will require restraint on growth of public-sector wages, pensions, and other social programs, as well as further energy tariff increases, which will affect household purchasing power across the income distribution. Improving targeting of social transfers can help support incomes of the poor and bottom 40 percent.

9. **Despite the narrowing of the current account deficit and restructuring of debt, external vulnerabilities are expected to persist.** Ukraine will require significant external financing to meet repayments on external debt of banks and corporates amounting about US$8 billion per year during 2016-2018. Further cooperation with the IMF and other official creditors will be important to meet external financing needs, rebuild international reserves, and restore investor confidence.

10. **The Second Review of the IMF Extended Fund Facility (EFF) Arrangement was approved on September 15, 2016.** Deeper structural reforms will be required for progress on the Third Review planned for later in 2016. The four-year EFF of $17.5 billion was approved in March 2015 and is intended to provide Ukraine with the opportunity to reform its economy, restore stability, and lay the basis for growth over the medium term. Policies targeted under the IMF's EFF and supported by the World Bank's Development Policy Loans (DPLs) in 2014-2015 include:

(a) Ensuring macroeconomic stability by (i) exchange rate flexibility to protect the economy against external shocks; (ii) monetary policy to restore price stability; and (iii) securing of financial sector stability by strengthening banks through recapitalization, reduction of related party lending, and resolution of impaired assets;
(b) Strengthening public finances, through (i) an expenditure-led adjustment to support fiscal consolidation over the medium term; and (ii) revamped social protection schemes to protect the poorest households; and
(c) Further decisive structural reforms, including (i) broad energy reforms, including the restructuring of Naftogaz to comply with the European Union Third Energy Package requirements, strengthen corporate governance and promote energy efficiency and energy independence; (ii) ambitious end-user tariff increases; (iii) reforms of state-owned enterprises to improve corporate governance and reduce fiscal risks; and (iv) governance reforms, including anti-corruption and judicial measures, deregulation and tax administration reforms.

## B. Sectoral and Institutional Context

### Ukraine gas sector

11. **Ukraine is among the most energy-intensive economies in the world and is largely dependent on natural gas.** Ukraine's energy intensity exceeds that of Germany by a factor of 3.6 and remains at Poland's 1990s level. Ukraine's primary energy supply is dominated by fossil fuels: coal (34 percent), natural gas (32 percent) and oil (10 percent). Demand for gas is met

through domestic production and imports. Domestic gas production accounts for about 40 percent of Ukraine’s natural gas consumption. Historically, about 60 percent of Ukraine’s natural gas consumption was imported from Russia; gas imports from Russia reduced to about 35 percent in 2015, with the remainder natural gas consumption being met through imports from Europe. About 40 percent of Russian gas exported to Europe transits through Ukraine, down from about 75 percent over the past decade.

12. **Households accounted for the majority of natural gas consumed in 2014 and 2015, either through direct supply from gas distribution companies or through district heating fueled by gas** (respectively about 35 percent and 17 percent of gas consumed). The industrial sector consumed most of the balance. In 2014, Ukraine’s gas consumption was about 43 billion cubic meters (bcm), of which about 20.5 bcm was produced domestically, 19.5 bcm was imported, and the balance covered through withdrawals from gas storage inventories. In 2015, Ukraine’s gas consumption reduced to about 34 bcm, in the wake of tariff increases, mild winters and reduced industrial activity. Of this amount, about 16.5 bcm was imported. About two thirds of total gas consumption is used during the winter season, which extends from mid-October to mid-April.

13. **The gas sector is largely state owned and dominated by a national vertically integrated oil and gas company, which faces financial difficulties.** NJSC “Naftogaz of Ukraine” (Naftogaz), through its various subsidiaries, has operations in exploration, development and production of crude oil and natural gas, as well as processing and supply to customers. Naftogaz supplies gas to households and the public sector through the regional gas distribution companies and district heating utilities, and also supplies about a third of gas demand from industry. On July 1, 2016, the Government decided to unbundle the transmission, storage and system operator functions from Naftogaz. The implications of the unbundling are discussed further in paragraph 23.

14. **Gas and district heating tariffs for households have historically been heavily subsidized, creating large fiscal and quasi-fiscal deficits. The Naftogaz deficit, for instance, was estimated to account for about 5.6 percent of GDP in 2014 and about 0.9 percent of GDP in 2015.**

15. **The Ukrainian gas transmission system is one of the largest in the world**, with about 39 thousand kilometers of pipelines, entry capacity at the Eastern border of about 288 bcm per year and exit capacity at the Western border of about 178 bcm per year. Gas transportation losses are nearly double that of Western Europe, and are partly explained by underinvestment in the transmission system.

16. **Gas storage is required (i) because of the seasonal nature of gas demand, which is higher in winter than in summer; (ii) because of physical or financing constraints which limit the ability to purchase gas solely during the winter months; (iii) to take advantage of lower gas import prices during the summer months; and (iv) for security of gas supply.** Gas storage levels required at the beginning of the winter season to ensure security of supply were not met in 2014 and 2015, and are unlikely to be met ahead of the 2016/2017 winter. Ukrainian gas storage capacity stands at about 31 bcm (including about 5 to 7 bcm which is known as

"cushion gas" that is required for storage and transmission operation and cannot be withdrawn without impact on the operability of the gas system), shared across 12 facilities mostly located in the central and Western part of the country. In a context of wide seasonal variations in demand, and in order to ensure security of supply, Ukraine typically accumulates about 20bcm of gas in storage ahead of the beginning of the winter season. However, Ukraine was unable to reach such levels in 2014 and 2015 due to financing constraints, and gas storage levels stand at about 13bcm as of 18 September 2016. Depleted inventories in one year are carried forward and have a negative knock-on effect in subsequent years. Several gas demand curtailment measures were implemented during the winter 2014/2015, in the context of warmer than average winter temperatures. Ukraine ability to serve customers in the 2015/16 winter was in part related to warmer than average winter temperatures and a reduction in industry demand. Currently low level of coal stocks at coal power stations may bring further pressure to increase gas storage levels ahead of the winter, to increase power production from gas-fueled plants.

17. **Domestic production of gas gradually reduced due to underinvestment** in maintenance of existing production and in exploration and development of new fields. Ukraine ranked fourth in Europe by volume of produced gas, and third by proven gas reserves, and has the potential to become self-sufficient through a combination of increased energy efficiency and domestic production. However, the public sector was not able to proceed with the required investments. As a result, gas domestic production from the public sector responsible for supply to households reduced from about 18 bcm per year over 2005-2009 to about 13 bcm per year in 2014[2], while production from private firms increased to about 5 bcm.

18. **Governance, transparency and accountability of the gas sector are weak.** The monopolistic market structure without adequate regulation of the dominant operator led to inefficient sector operation. The lack of basic governance structures and transparent internal controls, inconsistent and excessive state intervention, as well as inadequate metering of gas flows intensify further the inefficiency of the sector. Membership to the Energy Community and a compliance requirement with the European Union 3rd Energy Package has driven some progress in sector governance and regulation reforms, but further steps are still required to enable reaping the productivity improvements.

**Gas sector reform overview and implementation status**

19. **The Government of Ukraine recognizes the gas sector challenges and has embarked on an ambitious program to reform and restructure the gas sector.** The key reforms are supported by the IMF's EFF. These involved the adoption of the Gas Market Law (in April 2015) and the associated Gas Sector Reform Implementation Plan (in March 2015) to comprehensively restructure the gas sector, including: gradually increasing energy prices (and accompanying social assistance measures); incentivizing domestic production through attracting more private and international investment to the sector; restructuring of Naftogaz and distribution companies; and improving governance of the sector through introduction of an accelerated gas and heat meters installation program. The Government is strengthening the

[2] Figures exclude production by Chornomornaftogaz located in Crimea.

independence of the energy regulator responsible for tariff setting in the communal service and energy markets. As part of its commitment to increase transparency in the gas sector, the Government also undertook to join the Extractive Industries Transparency Initiative (EITI) and was accepted as a Candidate on October 17, 2013. The first Ukraine EITI report, which focuses on the oil and gas sectors, was published in December 2015.

20. **In order to reduce the fiscal impact of poor gas pricing policies, successive Governments implemented a progressive increase of gas and district heating tariffs, and tariffs reached parity with import prices in May 2016 and July 2016, respectively.** An increase of residential gas tariffs by 56 percent in May 2014 was followed by further substantial increases in gas (average increase of 285 percent) and district heating (70 percent) tariffs for households implemented in April 2015. A third adjustment to gas and district heating tariffs was made by the new Government in May 2016 and July 2016, respectively, bringing tariffs to the level of full import price parity one year ahead of Government's commitment under the IMF's EFF. The full impact of such tariff increases is still unknown, as the first collections from households in the 2016/17 heating season will take place from mid-December 2016 onwards. However, total gas and district heating demand from households reduced by about 20 percent from 2014 to 2015, in the context of mild 2014/15 and 2015/16 winters. Industrial gas prices will continue to be adjusted monthly to reflect exchange rate and gas import price movements.

21. **Eliminating energy subsidies requires an effective strategy for protecting lower income households from the adverse impact of higher energy prices.** Increasing the gas and district heating tariffs from 2014 to current levels without a compensatory social assistance measure would have increased the share of energy costs in total expenditure from 8 percent to 18 percent for the poorest 30 percent of the population, assuming no adjustment in volume of consumption. The increase in tariffs would have increased poverty significantly by 9.5 percentage points. To mitigate the impact, the government has improved and consolidated energy-related social assistance programs to better target the poor and simplified the application process to allow for an unprecedented scale-up of the Housing and Utilities subsidy program. As a result, the increase in the energy share of household expenditures for the bottom 30 percent, has been estimated to have been contained at 10.1 percent and the poverty increase to 4 percentage points. As of July 2016, an estimated 5 million households, or about a third of all households, are estimated to have enrolled in the Housing and Utilities Subsidy Program. While the program improves significantly the resilience of the poor population to further fluctuations in energy prices, new measures to tighten the targeting mechanism to improve its effectiveness are under consideration. Two challenges remain: (i) the undercoverage of low income households, and (ii) leakages to the higher income groups. Strengthening targeting to increase low income household participation while reducing eligibility of higher income households remains a policy priority. Extensive public information campaigns to explain the necessity of energy price increases and the social assistance response have been implemented, but need to be managed more effectively to target the low income excluded population.

22. **Several measures are under implementation to improve collection rates and collection transparency.** These include the option of smoothing bill payments, independent audit of Naftogaz receivables and legislative amendments to improve Naftogaz collections. Additionally, by end 2016, Ukraine aims to achieve universal gas and heat metering, make it

compulsory to bill based on meter reading where meters exist, and move to universal consumption based billing.

23. **The restructuring, unbundling and enhancement of corporate governance of Naftogaz (and future entities to be separated), is central to the overall gas sector reform and will have serious implications for the overall outcome of reforms.** On July 1, 2016, the Ukrainian authorities approved the ownership unbundling model for transmission and storage according to which two new legal entities will be created for transmission and storage operations. Next steps would consist of (i) undertaking the operational implementation steps required to achieve ownership unbundling; and (ii) adopting the legal requirements to implement transmission unbundling in line with the Third Energy Package. The timeline for implementation of the unbundling is linked to the ongoing arbitration of the gas transit contract between Naftogaz and Gazprom.

**Impact of the reforms on Naftogaz**

24. **Overall, the reform efforts are expected to allow Naftogaz to reach financial sustainability in its operations by end 2017.** In particular, the tariff reforms address the critical constraint of reaching cost recovery. Mainly due to the expected loss of transit revenue as a result of unbundling of the transmission, storage and system operator functions, Naftogaz is expected to have a cumulative funding gap of US$537 million by end 2019, which would need to be funded from Naftogaz's internal sources, commercial banks, state support or other sources. However, despite the loss of transit revenue, and due to tariffs having been increased to reflect the cost of imported gas, Naftogaz is expected to start generating positive operating cash flow from 2017 and nearly break even on a net cash flow basis in 2019. Maintaining a positive cash flow in the medium to long term would allow Naftogaz to reduce its reliance on state and multilateral support, help build credit to access commercial financial markets, and have sufficient resources to invest in operations.

25. **The financial forecast takes into account the impact of tariff increases on demand levels, collections and receivables.** The Naftogaz cash flow projections presented in the previous paragraph include Naftogaz's latest forecast about the impact of the tariff increases and expected lower overall gas consumption, and further assume that (i) demand from industry is reduced by an additional 10-20 percent; (ii) currently high collection levels for households are reduced to 80 percent; and (iii) the number of days receivable for households is increased to 90 days during the winter months of 2017-2018, as opposed to the current 60 days.

26. **The reforms are also expected to include restructuring of Naftogaz and strengthening of its corporate governance.** The Gas Sector Reform Implementation Plan, agreed between the World Bank, the Energy Community Secretariat and Ukraine in March 2015, envisages a number of steps to fully liberalize Ukraine's gas market. A key step of the Reform Implementation Plan is the unbundling of Naftogaz. The World Bank has an ongoing technical assistance project funded by the EC trust fund that supports Government's informed decision making of Naftogaz unbundling through analysis of several suitable unbundling options for the transmission, storage and production business lines of Naftogaz. The decision of the Cabinet of Ministers to unbundle the transmission, storage and system operator functions from Naftogaz

was consistent with the recommendations of this assessment. Pursuant to this unbundling, Naftogaz is expected to remain the major gas trader/wholeseller over the period to 2017-2019, and would continue to receive revenues from trading activities for gas transiting from Russia to Europe via Ukraine. In parallel, the technical assistance completed the analysis of production restructuring options for Naftogaz. The assessment recommends retaining the production subsidiary as part of Naftogaz group in the next 2-3 years, while enhancing the operational and managerial autonomy of the production subsidiary. Additionally, through EBRD support, the Government has approved a Corporate Governance Action Plan for Naftogaz to strengthen the corporate governance at the group level and bring it into compliance with the OECD Framework of Corporate Governance. EBRD is also supporting preparation of Corporate Governance Action Plans for the Naftogaz successor entities.

**Ukraine gas security of supply**

27. **However, in the transitional medium term, and despite the reforms and the positive outcomes they have started to yield, Ukraine faces a serious challenge of security of gas supply.** While tariffs converge towards cost recovery for the full year by 2017, Naftogaz will require financing to support gas purchases. Figures 1 and 2 below present the projected gas demand from Naftogaz consumers in 2016, as well as the projected supply sources (domestic and imports). Figure 3 shows the projected monthly storage levels in 2016, based on a base case scenario and an assumed average gas price of US$250/bcm. To ensure uninterrupted gas supply in 2015/16 winter, Ukraine aimed to accumulate about 20 bcm (about 60 percent of total storage capacity) of gas stored by the end of October 2015. Gas storage levels peaked at about 17 bcm (of which about 5 to 7 bcm are cushion gas and about 1.5 bcm are held by private gas companies) in early November 2015, and went down to 8 bcm in early April 2016, in the context of a warmer than average winter. By comparison, the IMF had modeled its projections on the basis of 19 bcm being stored before the 2015/16 heating season. There could therefore be a possible risk that, Naftogaz does not have sufficient financing to purchase the gas required to fill gas storage during the 2016 summer and supply its consumers.

**Figure 1: Projected gas demand from various Naftogaz consumers, Sept 2016 – Sept 2017**

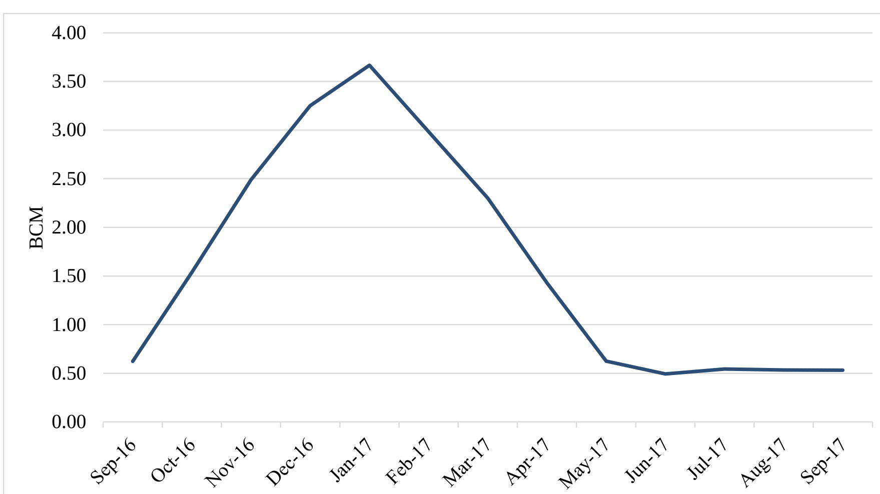


**Figure 2: Projected supply sources for Sept 2016 – Sept 2017**

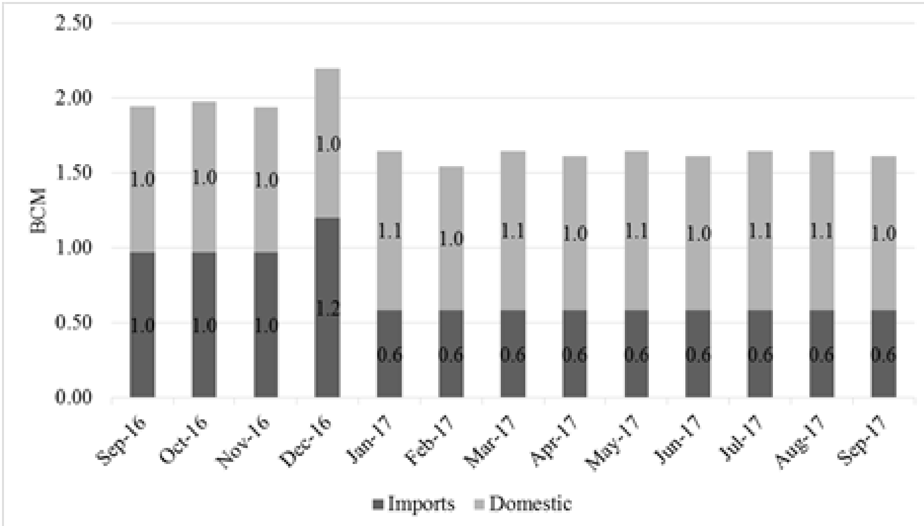
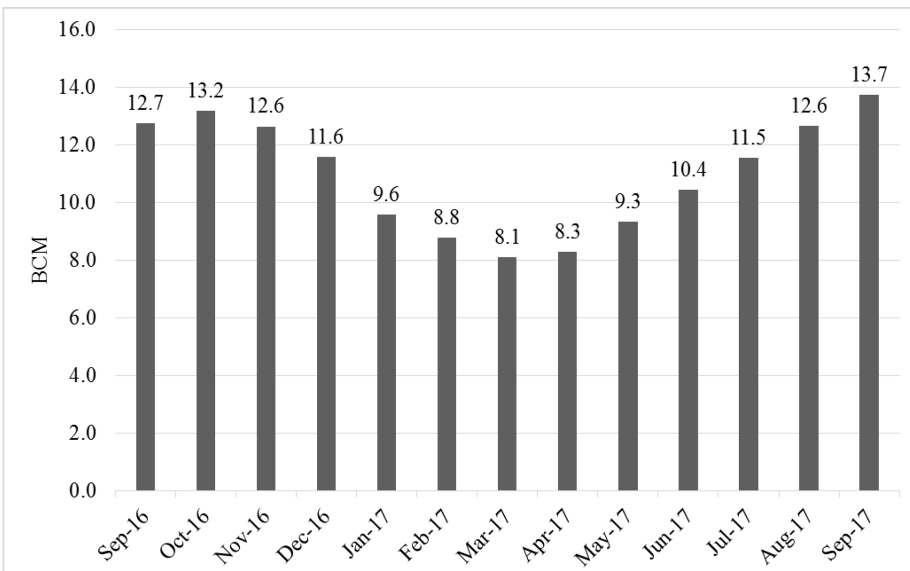



**Figure 3: Projected monthly storage levels for Sept 2016 – Sept 2017**




28. **Naftogaz has had a long standing arrangement with Gazprom for gas imports into Ukraine.** Gazprom remains an important trading partner although commercial disputes have led Naftogaz to diversify its sources of supply. For example, in 2011 Naftogaz imported about 40 bcm from Russia but this amount had fallen to 14.5 bcm in 2014 and 6 bcm in 2015. In the corresponding period, supplies from other non-domestic sources grew from zero to 5 bcm in 2014 and 9 bcm in 2015.

29. **Naftogaz initiated a process of diversification of its gas import sources by purchasing gas from European suppliers.** In September 2014, import capacity from European suppliers was scaled up due to the upgrade of the interconnection pipeline between Ukraine and

Slovakia. Other interconnectors allow imports from Poland and Hungary. Overall, the maximum capacity of the gas flows from Europe to Ukraine could reach about 22 bcm per year. On the back of the increased interconnection capacity, Naftogaz has successfully established commercial relations with about ten European suppliers. In 2014 and 2015, imports from Europe represented about 26 percent and 63 percent of total imports, respectively. In the first 8 months of 2016, all imports were from European suppliers. Additionally, the increased competition has succeeded in bringing gas import prices to Ukraine down from both Eastern and Western suppliers.

30. **However, this diversification effort is constrained by gas suppliers not being willing to take payment risk on Naftogaz or on Ukraine.** Consequently Naftogaz must pre-pay for gas on a month-to-month basis. The follow-on effect of this arrangement is that substantial working capital must be committed by Naftogaz while gas volumes and prices are uncertain, overall causing Ukraine considerable uncertainty and cost of supply. As a result, despite achieving diversification of suppliers, and during its transition to financial sustainability over the next three years, Naftogaz faces constraints due to liquidity requirements. Naftogaz's constraints with regards to purchasing gas from European suppliers have therefore shifted from one of credit-enhancement to diversify its sources of supply to one of liquidity. The liquidity constraint was increased by Gazprom also moving to pre-payment terms as part of the Winter Packages[3].

**Rationale for Bank involvement**

31. **The Bank is deeply engaged in supporting Ukraine's gas sector and governance reforms.** The engagement consists of: (i) technical assistance for the implementation of the Gas Sector Reform Implementation Plan, developed under the World Bank financed DPL, to comprehensively reform the gas sector, including gradual energy price increases (and accompanying social assistance measures); incentivizing domestic production through attracting more private and international investment to the sector; restructuring of Naftogaz and distribution companies; as well as improving governance of the sector through introduction of an accelerated gas and heat meters installation program; (ii) continuing technical assistance on energy tariff reform, with the objective of supporting the Government in taking stock of the outcomes of the first phase implementation of reforms, recommending corrective actions, and supporting capacity building and knowledge exchange; (iii) technical assistance on social safety nets and subsidy reform; (iv) support for Naftogaz's Institutional Reform and Corporate Restructuring, under an EU-funded Trust Fund[4]; (v) lending activities to improve the energy efficiency of municipal district heating companies, and technical assistance focused on energy efficiency in cities; and (vi) technical assistance for EITI compliance and implementation. The Project therefore leverages and complements the deep World Bank engagement in the sector, as well as the broader support from International Financial Institutions (IFIs) and other development partners to the sector reforms over the transitional period of the next three years.

[3] The Winter Package 2015/2016 provided the contractual framework for gas purchases from Gazprom for the period October 2015 to March 2016, at a fixed price for each quarter, and under pre-payment conditions.

[4] Joint European Commission (EC) and World Bank (WB) Facility to Support the Ministry of Energy and Coal Industry of Ukraine and NJSC Naftogaz of Ukraine (Naftogaz) for the Modernization of Ukraine Gas Transit System.

32. **The proposed IBRD Guarantee will help mitigate security of gas supply risks over the transitional period of the next three years, by reducing Naftogaz's financial liquidity constraints.** The facility will offer greater security of supply though further expansion of supply sources and increase in the portion of longer-term contracts in Naftogaz's portfolio; savings in working capital by moving from current pre-payment arrangements to post-payment; and establishment of a track record with suppliers and international financial institutions, which could set the basis for future contractual relationships beyond the duration of the guarantee. The facility will thereby allow Naftogaz to increase volumes of gas in storage during summer months and support purchases of gas during winter months.

33. **The proposed guarantee is reflective of collaboration amongst international financial institutions to support Ukraine.** The proposed guarantee is made possible by an agreement between IBRD and the European Investment Bank (EIB) dated 9 October 2015 under which the EIB will guarantee up to US$500 million of outstanding principal of selected IBRD loans in Ukraine plus up to US$20 million of outstanding interest[5]. The agreement is structured under EIB's 2014-2020 External Lending Mandate, which provides for the European Union granting comprehensive cover to the EIB in relation to the risks associated with the selected IBRD loans in Ukraine.

34. Additionally, the proposed IBRD facility has been developed in parallel to and designed to be complementary with a US$300 million revolving working capital gas purchase facility to Naftogaz from the EBRD. The EBRD facility, which would support gas purchases from European gas suppliers, was approved in September 2015. The loan agreement was signed on 23 October 2015, became effective on 14 December 2015 and fully disbursed by 19 January 2016. The Project has also been developed alongside the International Finance Corporation (IFC), which has been developing a commercial facility that was approved by the IFC Board on 17 December 2015. A further description of these facilities and how they are associated with the proposed IBRD Guarantee is contained in Section III.A below.

## C. Higher Level Objectives to which the Project Contributes

35. **The proposed guarantee is consistent with the Country Partnership Strategy (CPS) of Ukraine for 2012-16.** The CPS is structured along two pillars: (1) improving public services and public finances with the aim of building relations with citizens and (2) improving policy effectiveness and economic competitiveness with the aim of building relations with business. The proposed guarantee contributes to the priorities identified in the CPS with regards to gas sector reform and required investment in gas infrastructure renovation, aiming at increasing energy security. The project is also complementary to the working capital facility developed by EBRD, and would be open to all potential gas suppliers subject to compliance against commercial, integrity and Environmental, Health and Safety criteria.

[5] The EIB guarantee agreement is subject to a number of effectiveness conditions, including approval of the proposed guarantee by IBRD's Board of Executive Directors. Approval by the Board of the proposed guarantee will therefore fulfill this EIB condition of effectiveness. Additionally, a Cooperation Agreement between EIB and IBRD will be signed as an IBRD and EIB condition of effectiveness.

36. The Project also supports the gas sector reform objectives of the Government, as per the Gas Market Law and the associated Gas Sector Reform Implementation Plan adopted earlier in 2015.

## II. PROJECT DEVELOPMENT OBJECTIVE

### A. PDO

37. The Project's Development Objective (PDO) is to enhance Naftogaz's ability to increase Ukraine's security of gas supply, by facilitating access to cost-effective financing and improving the terms of the gas supply contracts supported under the Project.

### B. Project Beneficiaries

38. About 12.5 million Ukraine households, which consume gas and district heating, would benefit from larger volumes of gas to meet demand, thereby avoiding possible curtailment (as was experienced during the 2014/2015 winter). Households will benefit from the Project because reduced availability of gas has negative health and other economic and social impacts on people reliant on gas and district heating.

39. Additionally, a small number of industries, religious organizations and state organizations also serviced by Naftogaz will benefit from larger volumes of gas to meet demand.

40. Naftogaz would benefit from improved commercial terms for a significant proportion of gas imports supported by the facility. This would be achieved by shifting from pre-payment to post-payment terms for, as a minimum, purchases from European suppliers, and would result in reduced working capital requirements. Additionally, Naftogaz would also benefit from access to a wider pool of suppliers, thereby increasing competition amongst its gas suppliers.

41. There are no net greenhouse gas emissions, nor emissions savings, attributable to the Project, as the underlying physical infrastructure is fully built and the Project focuses on access to cost-effective financing for gas purchases, and improving of gas supply contracts supported under the Project.

### C. PDO Level Results Indicators

42. Progress towards achieving the PDO will be monitored through the following PDO indicators:

(a) Private capital mobilized, measured as the amount of funding disbursed by international financial institutions for the purpose of gas purchases.
(b) Improvement in gas contract terms within the overall Naftogaz gas contracts portfolio.

(c) Number of direct project beneficiaries, as measured by the number of households which use gas and district heating[6].

## III. PROJECT DESCRIPTION

### A. Project Components

43. The Project is composed of one Investment Project Financing (IPF) component: Support for Naftogaz's gas purchases.

**Component 1: Support for Naftogaz's gas purchases (the Euro equivalent of US$500 million IBRD)**

44. The proposed component is supported by an IBRD Payment Guarantee amounting to the Euro equivalent[7] of US$500 million, in support of Naftogaz gas purchases from suppliers which would meet eligibility criteria, including Naftogaz's current Eastern and Western gas suppliers.

45. The IBRD Payment Guarantee is intended to improve the commercial terms on which Naftogaz purchases gas from eligible gas suppliers in the regional gas market through the provision of a credit enhancement feature to Naftogaz's trading arrangements. For this purpose, Naftogaz will request from international financial institutions that they issue letters of credit (L/Cs) and/or provide loans[8], in the amount of up to the Euro equivalent of US$500 million for the benefit of individual gas suppliers, in support of Naftogaz's payments to each of the gas suppliers. In turn, Naftogaz's reimbursement of drawn L/Cs and/or loans provided by international financial institutions will be guaranteed with the IBRD Guarantee.

46. Naftogaz is expected to use the L/Cs and/or loans as liquidity to settle invoices with gas suppliers when and as they fall due. The relevant gas supplier would present the supporting L/C for payment by the issuing financial institution. In this event, the issuing financial institution will pay the amount due to and demanded by the gas supplier, and such amount will in turn become a loan between Naftogaz as borrower and the L/C bank as lender. Naftogaz shall repay such loan in equal instalments (together with interest) during seven heating season months occurring in the next twelve month period. Payments by Naftogaz to financial institutions will be guaranteed by the IBRD Guarantee, which will be paid once all available cure periods and remedies are exhausted by the parties. A detailed description of the payment mechanism is included below under "Rationale and Structure of IBRD Support".

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[6] Due to Naftogaz's portfolio being dominated by gas distribution companies and district heating utilities which largely supply households, other beneficiaries such as industry are not taken into account. Additionally, households are not expected to switch to alternative fuels over the life of the facility.

[7] "Euro equivalent" means the resulting amount in Euro when the facility amount is converted at the US$/EUR spot exchange rate that will prevail at or about the time of signing of key IBRD Legal Agreements.

[8] References to L/Cs or letters of credit hereafter include loans made to Naftogaz to purchase gas under the Facility. It is expected that L/Cs will be the primary instrument used to support Naftogaz's gas purchases. In all material respects, L/Cs and loans will operate in the same manner under the Facility.

47. The US$500 million guarantee would allow Naftogaz to leverage over US$1.5 billion in commercial financing, in Euro equivalent, for gas purchases over the life of the proposed facility. In turn, such commercial financing, through the proposed structure, would allow Naftogaz to enter into gas contracts under improved terms including moving from pre-payment to post-payment. The proposed facility has the objective of achieving the following outcomes:

(a) Greater security of supply through diversification of suppliers and increased availability of financing. While Naftogaz booked significant amounts of transmission capacity at the Western border, under the current contractual arrangements, it is uncertain whether supplies from Europe would consistently allow this full capacity to be reached, which could constrain residential and industrial consumers further. Additionally, limited availability of financing currently also reduces the volumes that can be purchased from Gazprom.
(b) A track record with suppliers and international financial institutions, which should set the basis for future contractual relationships beyond the duration of the guarantee. A good track-record will supplement the expected improvements in Naftogaz's financial situation which is also expected to improve the perception of the company's credit risk – provided that the credit rating of Ukraine has improved in the meantime.
(c) Savings in working capital for Naftogaz by moving from current pre-payment arrangements to post-payment for a significant proportion of gas contracts supported under the guarantee. Depending on the season, Naftogaz would save on the working capital cost associated with 35 to 70 days of gas supplies. This in turn is expected to allow reducing state subsidies to Naftogaz to finance its working capital. The expected financial cost savings for Naftogaz arising from the IBRD Guarantee would be US$99 million over the life of the proposed support by IBRD. Without IBRD support, Naftogaz would have no option but to prepay for gas and fund the resulting working capital requirement from its existing, costly short-term credit lines.

48. **The proposed guarantee would be open to all gas suppliers that meet eligibility criteria, including current Western and Eastern suppliers to Naftogaz.** The eligibility of gas suppliers would be founded on (i) Naftogaz's robust existing processes for establishing the pre-qualification of gas suppliers; (ii) the gas suppliers signing a letter of representations which will include provisions related to conflict of interest and adhering to the World Bank's Anti-Corruption Guidelines; (iii) the World Bank being satisfied with the environmental, health and safety performance of the gas suppliers, through a due diligence process based on publicly available information; and (iv) the prior approval by the World Bank of the gas supply agreement in place between Naftogaz and the gas supplier. Finally, the World Bank would only support specific individual contracts under such acceptable agreements in place with eligible suppliers; in particular, it is expected that the individual contracts would be agreed under post-payment conditions[9].

**Rationale and Structure of IBRD Support**

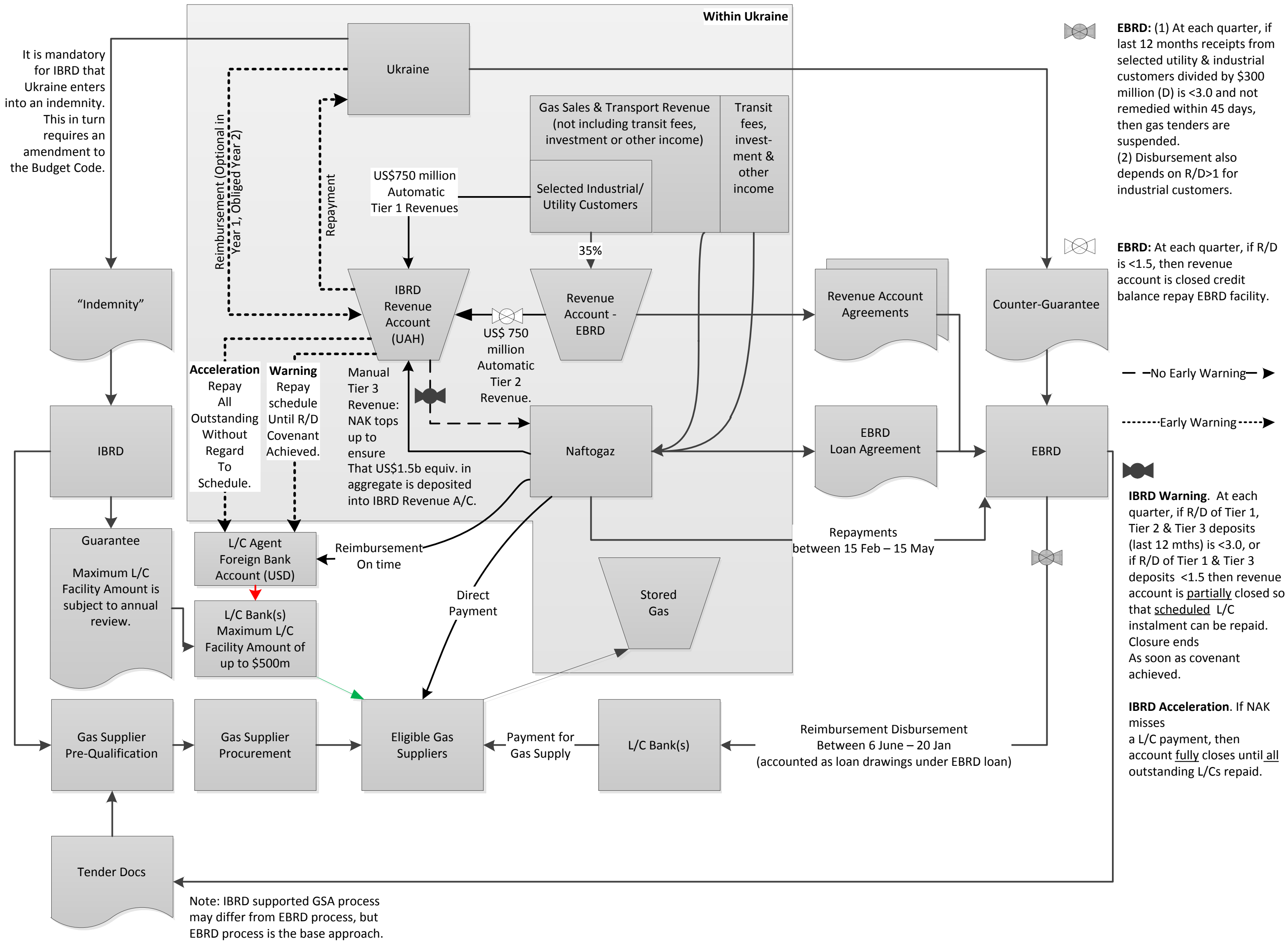
[9] Unless agreed by the World Bank in advance, in writing, at its sole discretion.

49. **The proposed facility would help Naftogaz improve the commercial terms on which it purchases gas and provide needed working capital support by enabling commercial financing intermediation.** A new and innovative guarantee structure has been designed to meet the needs of the proposed intervention as well as protect IBRD from the risk of an immediate call on its guarantee. The structure set out below recognizes that, while Naftogaz must be at the center of arrangements and be the primary obligor, financial support from the Ministry of Finance is also required. The structure therefore incorporates strong risk management features which incentivize Naftogaz to perform, and which also include the obligation for the Ministry of Finance to intervene should Naftogaz not meet its obligations. The following paragraphs set out how the proposed arrangements are expected to operate and Figure 4 below illustrates the overall structure.

50. **Naftogaz would request international financial institutions to issue letters of credit to eligible gas suppliers as payment security.** The facility is designed so that the letters of credit are drawn, thus providing both liquidity to Naftogaz and payment security to gas suppliers. Naftogaz would have the obligation to reimburse the drawn letters of credit against a set reimbursement schedule over a period of 12 months. The IBRD guarantee would backstop Naftogaz's reimbursement obligations to the international financial institutions. Figure 4 illustrates the proposed facility, which is designed to meet the needs of Naftogaz, gas suppliers and financial institutions, while implementing a strong risk management structure to minimize the risk of a call on the guarantee and providing time to help resolve the cause of a possible claim. The risk management structure, presented as a succession of "lines of defense", is set out below and in Figure 6.

51. **The letter of credit facility would be able to revolve at least once a year.** It is anticipated that several letters of credit would be issued in any year, each against one individual gas contract. In aggregate, the amount of L/Cs outstanding at any given time would not exceed the Euro equivalent of US$500 million. As Naftogaz reimburses the letters of credit against the pre-determined reimbursement schedule, amounts reimbursed become available to support further individual gas contracts and letters of credit. Section IV describes this revolving feature in more detail.

# Figure 4: Proposed Risk Mitigation Structure



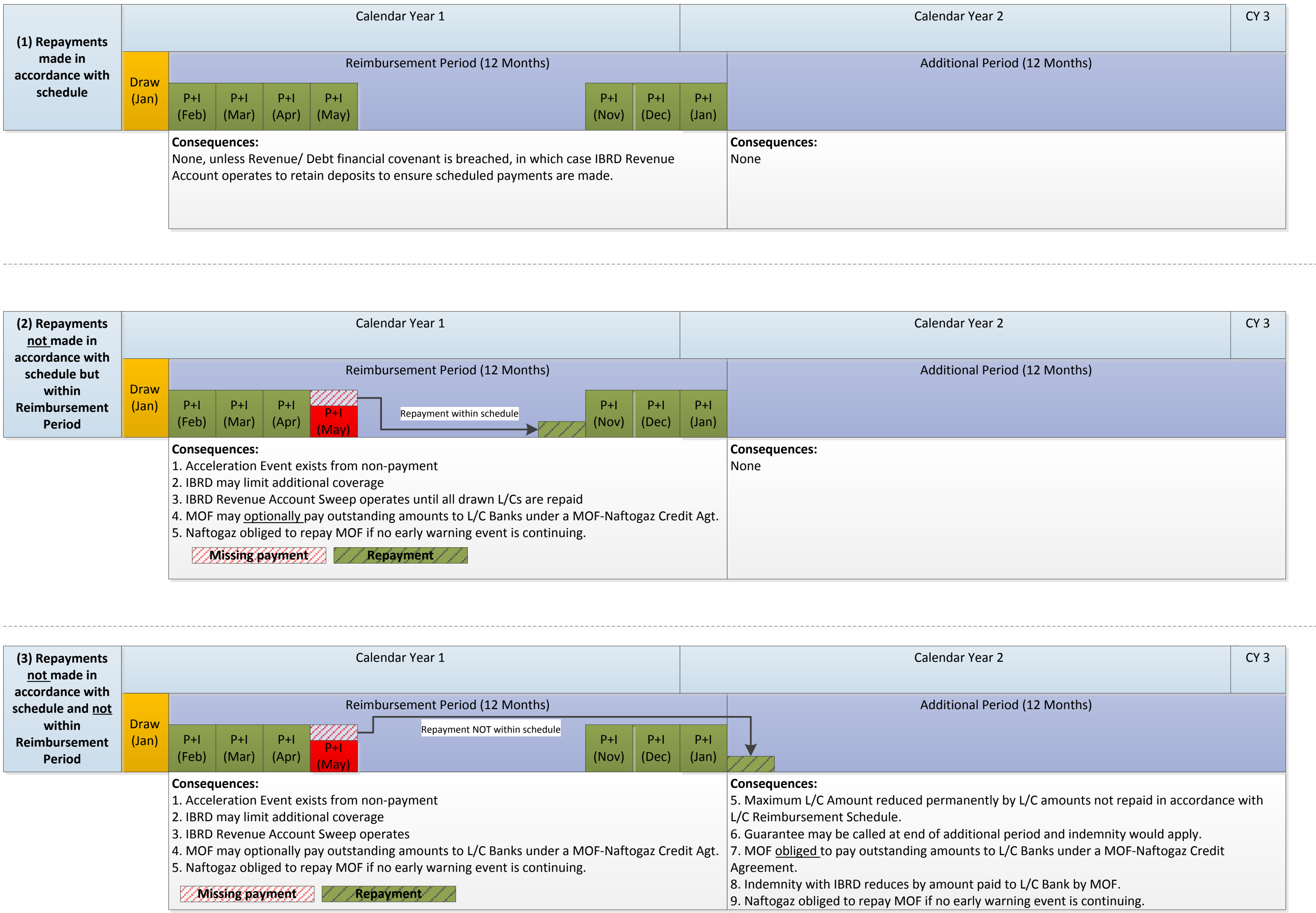
52. **A drawing on a letter of credit provided by a financial institution would create a debt that Naftogaz would be required to reimburse.** While Naftogaz may settle invoices from gas suppliers holding letters of credit as payment security directly (first line of defense), it would also be able to elect that one or more of the letters of credit be presented by gas suppliers to the agent for settlement. On doing so a debt between Naftogaz and the L/C issuing financial institution(s) would be created and Naftogaz would then be obliged to reimburse that debt in equal installments (together with interest) during seven heating season months occurring in the next twelve month period.

53. **Reimbursements from Naftogaz to the financial institution would flow through an IBRD Revenue Account**, held in Hyrvnia with a commercial bank. The purpose of the IBRD Revenue Account is a monitoring and regulating account into which revenues are deposited and, ordinarily, are fully withdrawn by Naftogaz while no "warning" or "acceleration" events exists. If those events do occur, the account is partially or fully closed, by IBRD or the L/C banks agent by direction to the account bank, so that drawn L/Cs can be reimbursed.

54. **The facility is designed so that Naftogaz can reimburse drawn letters of credit from three sources of revenues over twelve months, as a second line of defense.** The first source is from industrial and district heating utility customer revenues which are channeled directly and automatically into the IBRD Revenue Account. These revenues are referred to as Priority 1 Deposits and must amount to at least US$750 million per year, tested quarterly and looking back one year at each test date. The second source is revenues from other industrial and district heating customers which are directed through another special account (called the EBRD Revenue Account) that is for the benefit of EBRD under its facility and may be closed if those revenues fall below US$450 million per year using the same test criteria described above. All amounts deposited into the EBRD Revenue Account, while it is open, must be transferred to the IBRD Revenue Account and are referred to as Priority 2 Deposits. The third source of revenues relates to any other source of revenue that Naftogaz has and that is not a Priority 1 Deposit nor a Priority 2 Deposit. If Priority 1 Deposits or Priority 2 Deposits in aggregate are less than US$1.5 billion per year using the same test measures above, then Naftogaz must direct enough of its other revenues to make up the shortfall. This final source is referred to as Priority 3 Deposits.

55. **If the deposits flowing through the IBRD Revenue Account are less than required, a "warning event" is created as a third line of defense.** The consequence of that event is that the IBRD Revenue Account would be closed such that scheduled reimbursements of letters of credit that have been drawn can be made. Amounts received into the IBRD Revenue Account would also be converted from Hyrvnia into US$ as received and deposited into a foreign bank account held by the agent. Amounts to the credit of the foreign bank account would then be applied to reimbursements as they fall due for payment. The warning event and consequences would end when Naftogaz meets its obligation to make the required deposits into the IBRD Revenue Account. Figure 5 outlines the three letter of credit drawing and reimbursement scenarios applicable to the proposed facility.

## Figure 5: Drawing and reimbursement scenarios applicable to the proposed guarantee



56. **If Naftogaz misses part or all of a scheduled reimbursement, an "acceleration event" is created and this has a series of implications, as a fourth line of defense.** If Naftogaz does not make a payment in accordance with the schedule but the payment is eventually made within the relevant 12-month reimbursement period there are consequences. IBRD may limit the coverage and therefore issuance of any further letters of credit, and the IBRD Revenue Account would be closed fully. Deposits into the IBRD Revenue Account would be applied to reimbursement of letters of credit until all outstanding and drawn letters of credit (without regard to their reimbursement schedules) are fully reimbursed. The Ministry of Finance would also have the option, but not the obligation, to make payments on Naftogaz's behalf during this period.

57. **If a letter of credit is not reimbursed during its reimbursement period, the Ministry of Finance would be obliged to pay on Naftogaz's behalf within a further twelve month period, as a fifth line of defense.** The acceleration event conditions described above would continue to apply and the Ministry of Finance would now have an obligation to pay credits that have been drawn and are outstanding beyond their reimbursement period. In addition, the US$500 million facility in Euro equivalent, would be reduced by the amounts outstanding and not be reinstated. The arrangements governing MoF's optional and mandatory government support payments will be included in the indemnity agreement signed in favor of IBRD. Finally, financial institutions that have issued letters of credit or disbursed loans for which amounts are overdue beyond the reimbursement period would be required to wait for a further twelve months before making a claim under the IBRD guarantee (i.e., up to twenty-four months in total from the moment of credit withdrawal). Interest would accrue during this period and Naftogaz and the Ministry of Finance's reimbursement obligations would remain in effect.

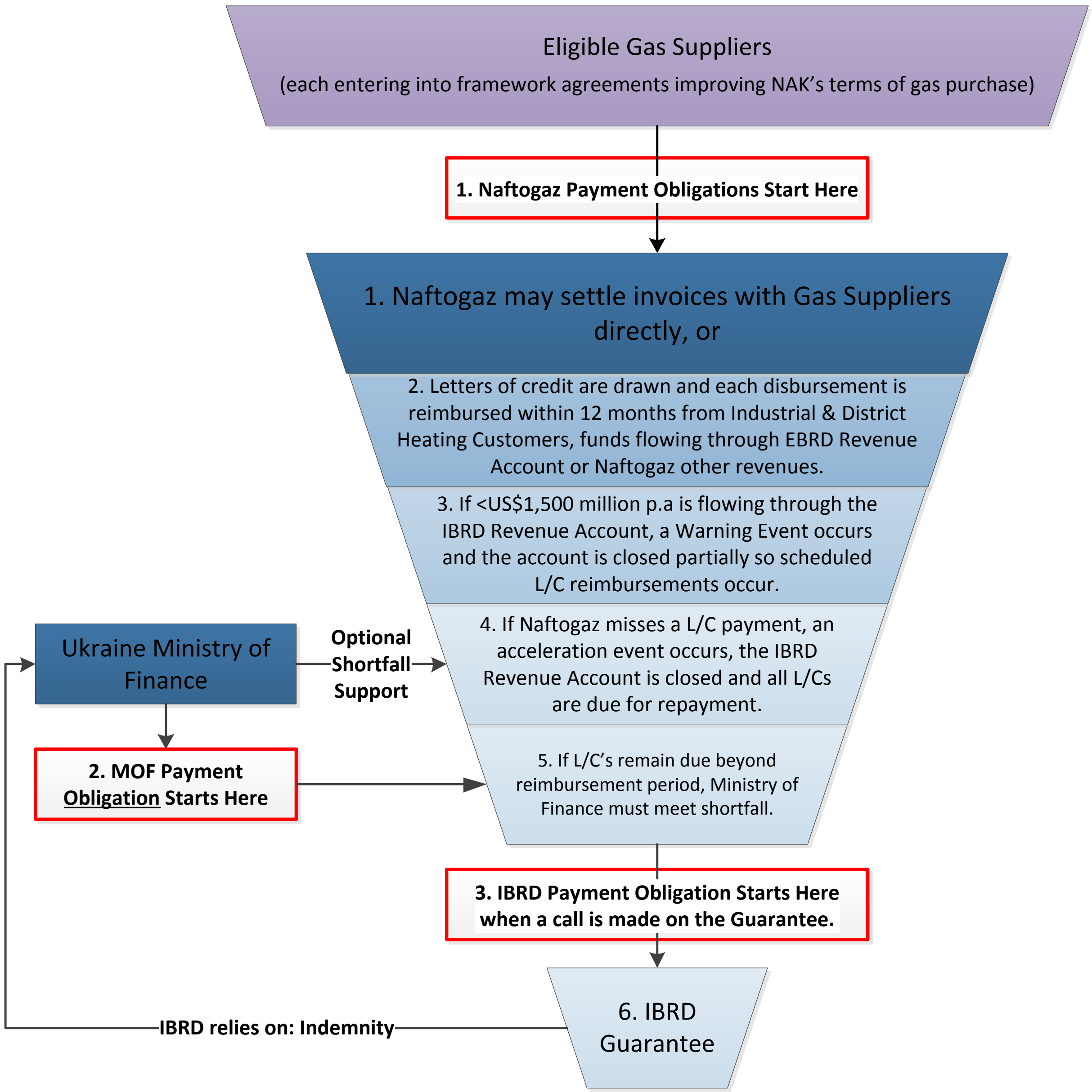
58. **A financial institution may make a claim under the IBRD guarantee only after all other lines of defense are exhausted.** IBRD would pay out under the guarantee and would, in turn, have the benefit of an indemnity agreement with the Ministry of Finance. The agreement would oblige Ukraine to indemnify IBRD on demand or as otherwise determined by IBRD.

59. **The proposed facility incentivizes Naftogaz to perform in the first instance but with strong underpinning support from the Ministry of Finance.** Figure 6 below illustrates the layers of protection contemplated in the proposed financing structure. The arrangement is consistent with the government's policy to improve commercial rigor within state-owned enterprises. However, it is also recognized that Naftogaz could fail to perform despite its best efforts and that the consequence of that failure would become an issue for government to address. Rather than doing so by waiting for the guarantee claim/ indemnification process to be triggered, the Ministry of Finance acknowledges that earlier action is in the best interests of Ukraine. That acknowledgement is contained in a letter from Ukraine's Minister of Finance to the Bank dated November 17, 2015.

60. **Overall, the IBRD Revenue Account would give effect to a cash flow waterfall** that would give first priority to the repayment of outstanding L/Cs if early warning and acceleration events occur. Proceeds into the revenue account may then be directed to making reimbursements to the Ministry of Finance should it have provided funding under the arrangements described above. Finally, proceeds would then be available for Naftogaz to draw for the funding of its

normal operations. Consequently, the IBRD Revenue Account is a central feature of the financing structure as a means of giving effect to the plan set out in the preceding paragraphs.

**Figure 6: Risk management proposed as part of the Project**




### IFI Support to Naftogaz for Gas Purchases

61. **Collaboration amongst international organizations has led to EBRD and IFC developing independent, but parallel facilities that take each other's structures into account.** The EBRD facility and the IFC facility address a US$300 million and a US$200 million financing gap to secure sufficient gas supplies, respectively. In aggregate, the EBRD,

IFC, and IBRD facilities are expected to support the purchase of an average of 4bcm of gas per annum, over 2017-2018, in a context of increasing gas prices. This represents about a quarter of 2015 gas import volumes.

62. **EBRD and Naftogaz signed on 23 October 2015 a US$300 million loan agreement to finance purchases of gas for a period of three years.** Naftogaz is expected to use the funds to tender for purchases of gas to fill up Ukraine's strategic storage facilities ahead of the winter. The loan is tied to a program of corporate restructuring of Naftogaz, including the creation of a supervisory board of independent and qualified directors, the introduction of internal audit, compliance, anti-corruption and risk management functions and an ownership and governance structure in line with best international practice. The EBRD facility became effective on 14 December 2015 and the final repayment of the EBRD facility is expected to be 20 January 2018.

63. **Regarding the IFC Facility, IFC would partner with ENGIE (formerly GDF-Suez), a global private sector gas supplier, to deliver natural gas for Ukraine's 2016/2017 needs[10].** The proposed investment would finance a facility of US$200 million for the sale of natural gas by ENGIE to Naftogaz. The one year, uncommitted facility to ENGIE would provide US$160 million from IFC and other DFIs, and the remaining US$40 million would consist of a US$20 million prepayment by Naftogaz and US$20 million commercial credit by ENGIE. This revolving accounts receivable factoring facility would discount sales invoices of ENGIE against Naftogaz for a period of 90 to 180 days, depending on the season.

64. The IFC facility would be secured by: (i) a gas contract amount to be provided as collateral at the time of each delivery, held in a dedicated cash account pledged to the lenders; and (ii) a Sovereign guarantee, issued by Ukraine in favor of ENGIE, to be an unconditional and irrevocable payment guarantee to cover Naftogaz's payment and performance obligations under the sales contract. The guarantee would be assigned in full to IFC (on behalf of the lenders) as security under the Facility.

## B. Project Financing

65. The purchases of gas supported under the facility will be fully supported by Citibank N.A. and Deutsche Bank AG, London Branch, as the financial institutions selected by Naftogaz to fund the facility. Both Citibank and Deutsche Bank will benefit from the proposed IBRD Guarantee. As the Bank instrument for the operation is a guarantee and not a loan, no Bank-financed procurement of gas will take place. The credit facility of the Euro equivalent of US$500 million is expected to roll over three times during project life which amounts to US$1.5 billion of gas purchases being supported by the Bank's guarantee.

[10] IFC project No. 36113.

**Project Cost and Financing**

| Project Components | Project cost | IBRD Support |
|---|---|---|
| 1. Gas purchases | US$1.5 billion (over three years), supported by financial institution(s) through a revolving US$500 million facility. | IBRD Payment Guarantee amounting to the Euro equivalent of US$500 million |
| Total Project Costs | US$1.5 billion | |
| **Total Financing Required** | US$1.5 billion | |

## C. Lessons Learned and Reflected in the Project Design

66. **Lessons from past operations have been incorporated into the project design which involves the introduction of a guarantee for a revolving credit facility.** The underlying financing being guaranteed is either repayment of a letter of credit or a loan, which has several precedents in guarantee operations for project finance transactions, especially in Africa (e.g. Nigeria, Kenya, Senegal[11]). One lesson from those operations is to build in a sufficient "cure period" between a potential guarantee trigger event and a call on the guarantee to allow the Bank to work with the government and other stakeholders to try to resolve policy, financial or other issues which could lead to a claim under the guarantee and a resulting payout. Applying this lesson, the project design proposes that the Bank's guarantee can never be called until substantive time has elapsed from an individual credit withdrawal, either as a call on a letter of credit or direct disbursement to gas suppliers. The trigger event for a guarantee call is non-payment of a scheduled credit repayment by Naftogaz, which in all cases would give at least 12 months for the government to cure the non-payment under its credit reimbursement support.

67. **Incorporation of a robust risk mitigation structure is a lesson learned from recent Clean Technology Fund (CTF) Guarantee facilities**, one being prepared for the Philippines and another under implementation in India[12]. Similar to the proposed design, both operations involve a guarantee designed to backstop a revolving facility. The main differences to the proposed operation are that the Philippines and India facilities have been designed to issue sub-guarantees, not financing, for commercial loans extended for energy sector investments, and that neither project had the benefit of a sovereign counter-guarantee[13]. Both facilities have been designed with multiple risk mitigation layers to minimize the likelihood of a CTF Guarantee call, including creditworthiness requirements for supported investments/loans, reserve accounts, loss provisioning as well as proactive monitoring of facility portfolio and requirement for government intervention in case of unexpected losses. The proposed facility for Ukraine incorporates many of the same risk mitigation mechanisms to minimize the likelihood of a call on the Bank's

[11] Nigeria Electricity and Gas Improvement Project; Guarantee Series for Kenya Private Sector Power Generation; and Senegal Taiba Ndiaye Independent Power Producer Project.

[12] Philippines Renewable Energy Development Project and India Partial Risk Sharing Facility for Energy Efficiency Project.

[13] CTF policy does not require a sovereign counter-guarantee for a CTF guarantee.

Guarantee. The creation of an IBRD Revenue Account acts as a monitoring tool and a contingent reserve account to ensure timely repayment of scheduled repayments. Credit provided under the facility can only be extended to eligible suppliers under eligible gas supply agreements. Further issuance of credit can be suspended if concerns arise about Naftogaz's ability to pay for gas, or repay the credits issued. As a final risk mitigation layer, the government is committing in advance to provide additional financial support to Naftogaz to meet its obligations under the credit facility, under the state counter-guarantee.

# IV. IMPLEMENTATION

## A. Institutional and Implementation Arrangements

68. **The proposed project will be implemented by Naftogaz**. Naftogaz will be responsible for establishing and maintaining the financial and risk management arrangements required for the gas support facility, including setting up the revenue account. Naftogaz will also be responsible for the procurement of the supported gas from eligible gas suppliers, following commercial practices and the Bank's safeguards requirements.

69. **Naftogaz has a strong core team in place, which is responsible for leading project implementation in coordination with relevant stakeholders, including Ukrainian authorities.** The Naftogaz implementation team includes Naftogaz's Deputy Chairman of the Board and Chief Financial Officer, Head of Treasury, Head of Gas Trading, Head of Gas Imports and Customs Clearance, Head of Legal Department, and Chief Advisor to the Chairman of the Board.

70. The implementation arrangements are centered mainly on three activities.

(a) The first activity consists of the procurement of financial institutions, followed by development of and completion of negotiations on documentation and then satisfaction of effectiveness conditions. Naftogaz issued a Request for Proposals (RFP) on 24 November 2015. Twelve large international financial institutions were invited to make proposals within a five-week proposal development period ending with bid submission on 31 December 2015. The process of selecting the Credit Issuing Financial Institution(s) was completed on 30 August 2016 (see paragraphs 71 and 72 for further details).

(b) The second activity consists of the legal documentation which is anticipated to be completed by end November 2016. Following the selection of the Credit Issuing Financial Institution(s), the development and negotiation of the Transaction Documents would follow with completion and signature within a period of 10 to 12 weeks. Credit issuance would follow the signing, subject to conditions precedent to effectiveness having been met. Naftogaz expects that the facility will be effective by December 2016.

(c) The third activity consists of the procurement of the gas supported under the facility, which would be undertaken by Naftogaz following commercial practices and World

Bank safeguards and procurement requirements. The implementation arrangements are further described in Section VI and Annex 2.

71. **The procurement of the international commercial banks was led by Naftogaz, through a competitive but challenging process.** On November 23, 2015, Naftogaz issued a Request for Proposals (RfP) to twelve international commercial banks. The RfP included the draft term sheet initialed by Naftogaz and the Bank, the main terms of which are included in Annex 5. Naftogaz received proposals from two banks, but one withdrew during the process, leaving Citibank as sole proponent. Between January and June 2016, Citibank approached a very significant number of financial institutions in order to secure financing partnerships. Between June and August 2016, Citibank made two firm proposals for the full US$500 million amount being sought by Naftogaz. The first was presented as a joint proposal from Citibank and Deutsche Bank. The second was under a partnership formed by Citibank and another reputable international financial institution. Naftogaz selected the Citibank-Deutsche Bank joint proposal, denominated in Euros. This proposal has the lowest all-in cost for financing and meets the requirements set out by Naftogaz and the Bank under its Guarantee. Naftogaz mandated Citibank and Deutsche Bank as lead arrangers for the facility on August 30, 2016. The financing under the mandate is subject to completion of legal documentation, no material adverse change, final credit approvals and the IBRD guarantee being effective.

72. **The Bank supported Naftogaz during the bank-selection process to ensure the IBRD guarantee risk coverage is appropriate and priced well.** A thorough procurement process for the selection of the L/C banks was undertaken. The number of financial institutions approached and time and effort to close the bank-selection process confirmed that finding banks that were willing to provide financing to Naftogaz even under the Bank's Guarantee were limited. Detailed financial evaluation has been carried out to ensure that Bank's credit risk is well reflected in the final pricing being made available to Naftogaz. The proposed guarantee structure is more complex than typical time-tranched guarantees. The facility has uncertain cash flows from a timing perspective; it is also highly illiquid and structured. It has a 24-month waiting period before a call can be made on the IBRD guarantee, instead of the usual 12-month waiting period. The structure also has five lines of defense that reduce the risk of a claim under the IBRD guarantee and the exercise of rights being passed to funding banks.

73. **The Bank's Guarantee will be fixed in Euros to correspond to the currency of the underlying commercial financing.** Naftogaz's evaluation of the offers received was based on the lowest cost combination of USD and EUR financing. While Naftogaz's gas suppliers generally accept both currencies as payment, an all-EUR financing represented the lowest associated margin and base rate (Euribor) for Naftogaz, as opposed to USD financing which had been initially requested in the RfP.

## B. Results Monitoring and Evaluation

74. Overall project monitoring and evaluation with be carried out by Naftogaz, which will produce the quarterly, semi-annual and annual progress reports, as detailed in Annex 2.

75. Additionally, an independent auditor or other suitable form of attestation will be hired by Naftogaz to undertake a comprehensive review of the individual contracts supported under the project, and of the procurement process followed to conclude such individual contracts. The reports from this audit or other suitable form of attestation will be submitted annually.

76. Annex 1 presents the Project's results framework, which defines specific outcomes and results to be monitored.

## C. Sustainability

77. The sustainability of the Project is rooted in improved governance, transparency and financial situation of Naftogaz over the next three years.

78. The government is committed to implementing the measures outlined in the IMF EFF, as demonstrated by the bold steps taken to increase gas and heating tariffs, and the measures implemented to mitigate the impact of such tariff increases on most vulnerable households. Tariffs were increased to reach import price parity in mid-2016, and allow Naftogaz to fully cover its cost of gas supply for the full year from 2017 onwards.

79. Total revenues to Naftogaz may decrease over the next three years owing mainly to (i) the outcome of the planned unbundling; and (ii) the liberalization of the gas market initiated in October 2015 which could lead to a decrease in Naftogaz's industry market share. However, coupled with the tariff increase measures previously mentioned, the financial health of Naftogaz is expected to improve to reach financial sustainability in its operations by end 2017.

80. The government is also committed to supporting the Project in the event that Naftogaz fails to meet a repayment obligation under the guarantee facility (through the state counter-guarantee), thereby mitigating some of the uncertainties facing Naftogaz and the gas sector in its transition over the next three years.

# V. KEY RISKS

## A. Overall Risk Rating and Explanation of Key Risks

81. This Project has been assessed to have an overall implementation risk of ***High*** mainly due to the political and macroeconomic situation in Ukraine, possible challenges in the implementation of the planned gas sector reforms, limited institutional capacity to implement the Project, overall weak corporate governance and stakeholder's risk.

82. **Ukraine's political and macro-economic situation:** A period of poor macro-economic management, fiscal imbalances and delays in structural reforms was aggravated by the conflict in the East of the country. Contractions in GDP and use of international reserves to purchase gas in the 2014/15 winter left the country in a weakened state at the start of 2015. With the macroeconomic adjustments initiated by the Government in 2014, initial signs of economic stabilization have emerged since the fourth quarter of 2015. However, Government solvency risk remains, and is compounded by foreign exchange risks. The resulting risk for the facility is lack

of available government funding to provide optional or mandatory support to Naftogaz in a timely manner. The risk is rated as High. **Mitigation:** The political and macroeconomic risks cannot be mitigated at the project level other than being constantly monitored (to adjust the project design, as necessary). The proposed facility would help address some of the macro-economic risks indirectly by allowing the government to avoid using its foreign reserves for gas purchases in the upcoming winter, which could erode the positive steps made in 2015.

83. **Gas sector reform:** Naftogaz's financial position deteriorated during 2014 because gas became more expensive in local currency terms and the weaker economy led to lower earnings levels. Naftogaz's deficit was 5.6 percent of GDP and was financed by the government through recapitalization bonds funded by National Bank of Ukraine, increasing public debt and reducing foreign reserves. Naftogaz's deficit reduced to 0.9 percent of GDP in 2015 and is expected to be eliminated from 2017 onwards in the wake of tariffs increased to cost recovery in mid-2016. Continuation of timely adjustments of tariffs in line with import gas prices will be critical to Naftogaz's financial health. Decrease in collections and loss of industry market share could also adversely affect Naftogaz's financial position. Finally, the implementation of the unbundling of the transmission, storage and system operator functions from Naftogaz may present challenges. The risk is rated as High. **Mitigation:** The government has with the support of the Bank developed and approved a comprehensive gas sector reform program that includes: restructuring of Naftogaz; measures to increase domestic production; graduated tariff increases; targeted social assistance measures; and so forth. Timely implementation of this reform program remains a risk that can be mitigated with the IMF and World Bank program oversight. Regarding the risks around implementation of Naftogaz restructuring and unbundling, the World Bank and other development partners have proposed additional technical assistance support to facilitate any needed due diligence and operational implementation steps.

84. **Institutional capacity for implementation:** Naftogaz has limited institutional capacity to undertake the required commercial and legal arrangements to implement the project according to the agreed schedule. Naftogaz has been encouraged by the IBRD task team to employ external legal counsel or co-opt suitably experienced counsel from within government, so that sufficient support exists to meet the ambitious timelines for effectiveness. Naftogaz has decided to do so. However, while Naftogaz has mobilized resources to complete the transaction, concerns regarding Government capacity remain, thereby introducing a possible risk that the timelines to effectiveness may face some delay. The risk is rated as Substantial. **Mitigation:** The Bank will continue to support Naftogaz and Government to help ensure timely project effectiveness. In the meantime, the Bank task team and its external counsel are using (where possible) the agreements developed for the EBRD loan to Naftogaz, which will reduce review load on Naftogaz and contain transaction costs.

85. **Naftogaz:** Naftogaz's revenue streams could reduce as a consequence of: (i) the unbundling of the gas transmission and storage subsidiaries; (ii) potential reduction of gas demand due to higher gas and district heating tariffs; and (iii) reduction of market share in industrial consumers due to the liberalization of the gas market. This could affect the financial sustainability of Naftogaz. The risk is rated as High. **Mitigation:** The economic and financial analysis was performed on Naftogaz revenues from existing gas customers, taking into account: (i) an about 20 percent reduction in overall gas sales against 2015; (ii) a 10 to 20 percent

reduction in industry market share; (iii) a reduction in collection levels for households to 80 percent; and (iv) an increase in number of days receivables for households to 90 days in 2017 and 2018. The analysis overall shows that Naftogaz would reach financing sustainability in its operations by end 2017.

86. **Stakeholder risk – Gas suppliers:** Gas suppliers may not be willing to enter into gas supply arrangements with Naftogaz that would lead to the level of benefits anticipated, in particular related to post-payment terms. The risk is rated as Moderate. **Mitigation:** Several feedback workshops held with three large European suppliers confirmed that the preliminary structure would address the suppliers' concerns with regards to payment default, and improve contractual terms to Naftogaz. The facility is however designed to allow flexibility in the terms of contracts supported during the first year of the facility, to ensure security of supply during the 2016/17 winter.

87. **Stakeholder risk – International banks:** Given the uncertainty regarding Ukraine's credit, there may be a risk that international financial institutions, which are a key element of the proposed IBRD Guarantee, would not ultimately be willing to issue letters of credit or provide loans to support purchases from eligible gas suppliers. The risk is rated as Low. **Mitigation:** Two reputable international banks familiar with Ukraine, IBRD guarantees, and the proposed guarantee structure have committed to the facility, subject only to the conditions outlined in paragraph 71.

88. **Control over the IBRD Revenue Account:** Section IV describes the role that the IBRD Revenue Account will play as part of the proposed guarantee structure. The implementation of the arrangements for such an account in Ukraine carries some challenges, which raises risk of proceeds into the account either not being made or that withdrawals inconsistent with the intent of the guarantee arrangements are made without consent. The risk is rated as High. **Mitigation:** In the case of the EBRD facility, this risk was addressed through a tripartite agreement that will be entered into between EBRD, Naftogaz and Oschadbank as an effectiveness condition and as a means to govern how revenues will flow through the account for the benefit of EBRD, should a default event occur. The agreement is comprehensive and is likely to be a foundation for the IBRD Revenue Account, which serves a similar purpose.

## VI. APPRAISAL SUMMARY

### A. Economic and Financial Analysis

89. The economic and financial analyses were conducted considering the alternative fuel used for heating and higher associated costs under a "without project" scenario, and the additional financing cost Naftogaz would incur from using alternative sources of financing, respectively. Both costs would be either directly incurred or passed on to households, with the consequent higher energy expenditures disproportionately affecting the poor. The alternatives considered do not analyze a gas shortage scenario.

90. The economic analysis was conducted comparing the economic cost of meeting the heating and cooking demand of residential consumers under "with project" and "without project" scenarios. The "with project" scenario will allow meeting household demand for heating using

the maximum amount of about 2 bcm of gas purchases that can be supported when the IBRD guarantee facility is made available to Naftogaz. Given that during winter months residential users and district heating companies account for almost 90 percent of gas sales of Naftogaz, the impacts of a potential disruption in gas supply on industrial and other users were not considered. Additionally, given the higher efficiency of the gas distribution system versus that of district heating, the economic analysis quantified only the costs associated with replacing 2 bcm of gas used for district heating with electric heating, in order to remain conservative. There are two possibilities for "without project" scenario. The analysis quantified the economic benefit under the more conservative scenario 1.

91. Without Project - Scenario 1: The demand for space heating and hot water needs is assumed to be met with electric energy, which will be supplied primarily from coal-fired power plants, assuming that the required additional coal can be imported. The increase in residential demand for electricity due to shortage of gas is estimated to require an additional 13.2 billion kWh of electric energy, which will require an equivalent of 5,000 MW of coal-fired capacity. Assuming that gas-fired heating plants and Combined Heat and Power plants will no longer be available due to the lack of gas, the coal-fired plants would be increasingly used as peaking plants. The existing coal-fired generation capacity can meet such incremental demand, provided that the additional required coal can be imported. Therefore, under this scenario, the economic price of imported thermal coal was used to evaluate the economic cost of meeting heating demand with electric energy. The analysis suggests that in the case of a disruption of natural gas supply due to Naftogaz's inability to make upfront payments for gas, the country will incur an additional annual economic cost of US$50 million to meet the demand for heating and cooking needs using electricity. This computation does not include the social cost of $CO_2$ emissions. **The estimated additional annual economic cost increases to US$250 million when the social cost of $CO_2$ emissions are included, due to the higher output from coal-fired power plants.**

92. Without Project - Scenario 2: In the event that the coal required for operation of coal-fired fleet under scenario 1 cannot be imported, then the residential users will need to rely on household-level (often times custom-made) fuel oil heaters. This would create significant economic costs for society due to: (a) higher cost of heating per volume of space given the economic cost of fuel oil; and (b) increased incidence of poisonings and other emergencies related to indoor air pollution, which will result in lost economic output and higher healthcare costs.

93. At the financial level, Naftogaz is expected to derive considerable benefits from the World Bank guaranteed credit facility. The main benefit is access to a large amount of working capital financing which would otherwise be available to Naftogaz only at a high cost. The letters of credit to be issued by the facility would allow Naftogaz to obtain 50-day payment terms for its contracts with western suppliers, in accordance with EFET standards, and possibly other suppliers, which would provide immediate working capital relief compared to the suppliers' current prepayment requirement. **In the base case, total expected savings accruing to Naftogaz from the guaranteed credit facility are expected to amount to US$99 million** in comparison to a hypothetical stand-alone facility. The savings are due to the much lower interest margin charged to a credit facility which is fully backstopped by the Bank's AAA-rated Guarantee and the shorter working capital funding period enabled by improved payment terms.

94. Naftogaz received a qualified audit opinion for its 2015 financial statements due to uncertainty about asset valuation and incomplete information on several financial items which were audited. Based on the audited financial statements, Naftogaz's financial position has started to improve, although challenges remain. Net income in 2015 improved considerably compared to to 2014, following solid revenue gains. Operating cash flow also improved compared to 2014, returning to the improving pattern seen in 2010-2013. While Naftogaz's liquidity position also improved especially vis-à-vis suppliers, it still faced considerable challenges to meet its current debt service obligations.

95. The results of the base case cash flow projection indicate that Naftogaz's operating profitability is improving and it is projected to generate a positive net operating cash flow from 2017. The tariff increases are expected to add US$2.5 billion to annual gas sales during 2017-2019. The implementation of the unbundling of the transmission, storage and system operator functions is assumed to be completed in August 2017, and transit revenue is no longer be available to Naftogaz. It assumed that state-owned banks would refinance their loans to Naftogaz as they become due, as they have done in the past. The EBRD and World Bank working capital facilities represent new sources of financing and Naftogaz expects to revolve both facilities at least three times during 2016-2018. Several sensitivities were performed, including the impact of currency depreciation; the sensitivities overall confirm that Naftogaz would have the ability to reimburse the draws under the World Bank facility.

## B. Technical

96. The Project would support the purchase of gas supplies which would be delivered either at border points or Virtual Trading Points. The supported gas supplies would be subject to eligibility criteria as discussed in paragraph 48, and be procured following Naftogaz's procurement process as presented in Annex 2.

## C. Financial Management

97. This is a guarantee operation underpinning Naftogaz' ability to meet operational financial obligations - relating to the procurement and supply of gas – as and when they fall due. The financial management assessment seeks to obtain reasonable assurance that acceptable financial management arrangements are in place to minimize the risk of the guarantee being called and to support the project in meeting its development objectives. The assessment concludes that existing institutional and operational arrangements, together with proposed safeguards measures, are sufficient to support the project's objectives and concludes that fiduciary risk is Moderate.

98. During the life of the project, Naftogaz will be required to have its annual financial statements audited by an independent auditor under standards acceptable to IBRD and to submit the audited financial statements to IBRD within 6 months after each reporting period. IBRD will publish those financial statements in accordance with its access to information policy.

## D. Procurement

99. The Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, issued January 2011 and revised in July 2014 ("Procurement Guidelines") shall be applicable under the proposed guarantee facility. Procurement of natural gas to be financed from the guaranteed borrowing shall be done with due regard to the provisions of paragraph 1.5 and 3.18 of the above referenced Procurement Guidelines. World Bank's Anti-Corruption Guidelines for World Bank Guarantee and Carbon Finance Transactions –revised 2014 ("Anti-Corruption Guidelines") shall apply to this Project.

100. The Bank's due diligence has been carried out by the Bank task team between September 2015 and November 2015 to establish whether Naftogaz commercial practices with regards to gas purchases meet the World Bank Guarantee criteria of due economy and efficiency. Furthermore, the Bank's due diligence was performed to assess whether (i) procedures used by Naftogaz provide reasonable assurance that the Project will be carried out diligently and efficiently by Naftogaz; and (ii) the natural gas to be procured will be delivered in timely fashion and will be priced so as not to affect adversely the economic and financial viability of the Project.

101. As a result of the Bank's due diligence, it has been found that (i) the gas procurement/trading procedures established by Naftogaz are robust and in line with industry practices; (ii) the outcome of the gas purchases is economic; and (iii) that therefore procedures and outcome can be considered to be consistent with the World Bank's Procurement Guidelines with respect to economy and efficiency. The areas which required improvement in Naftogaz's gas procurement process were identified, and a list of agreed actions and their implementation schedule have been discussed and agreed with Naftogaz. The details of the procurement arrangements are provided in Annex 2.

102. In particular, Annex 2 outlines the eligibility criteria for gas suppliers, which will be founded on (i) the robust pre-qualification process undertaken by Naftogaz; (ii) the adherence to a conflict of interest provision and the World Bank's Anti-Corruption Guidelines; (iii) the absence of reputational risk related to environmental, health and safety practices from the gas supplier; and (iv) the prior approval by the World Bank of the gas supply agreement in place between Naftogaz and the gas supplier.

103. The procurement process outlined in Annex 2 differs substantially from the procurement process followed under the EBRD facility, which is separate from the Project. This is due to EBRD extending a loan rather than a guarantee and therefore following an "Open Tendering with Prequalification Procedures" as required by EBRD's Procurement Policies and Rules.

## E. Social (including Safeguards)

104. **Social Inclusion and Gender.** The proposed guarantee will assist Naftogaz by providing access to financing and thereby increasing the ability to store gas in the summer and purchase gas in the winter. No aspect of this project is therefore expected to affect households negatively.

In Ukraine, an estimated 80 percent of the population use gas (2014 data), with the poor and the bottom quintile using gas only marginally less than the rest of the population (their gas use is estimated at 69 and 74 percent respectively). The benefit will be significant even for rural households given that they rely heavily on gas distribution, which accounts for about 42 percent of their total energy consumption.

105. This guarantee operation represents a gender-sensitive intervention. Overall, gender impacts are expected to be positive, as shortages of gas can compound the burden of household tasks for rural women and reduce time available for income earning and other responsibilities. The latest household survey data (2014) show that women represent 55 percent of the poor[14] (54 percent of the total population) but they represent the overwhelming majority of groups which are likely to be very vulnerable to disruptions in gas supply: 70 percent of single parents and 77 percent of the elderly poor (defined as over 60) are women. Elderly poor women in rural areas are a particular concern as they are likely to live in isolated farm houses (as opposed to multi-unit buildings) characterized by low energy efficiency. More reliable gas supply is expected to help alleviate the hardship of the above female category groups. Moreover, the results framework captures the share of female population within the households benefiting from the project.

106. The project is part of a broader engagement by the Bank to restructure the energy sector. The reform program is supported by two Development Policy Loans which, amongst others, seek to restructure tariffs, and improve the social assistance program. In addition, ongoing technical assistance projects provide assistance to the implementation of the reforms, such as the technical assistance supporting the design of the government communications strategy on the reforms and the compensation measures available, and the one supporting the scaling up of the social assistance measures supporting energy consumption for the poor. Work under the latter is supporting the efforts to improve targeting and facilitating the compensation of poor households for higher energy bills. Simulations based on 2014 data suggest that the program as strengthened since 2014 has a positive gender effect - 57 percent of eligible households according to the 2016 program design are female-headed (30 percent of eligible households are comprised of single women).

107. **Citizen engagement.** With regards to citizen engagement, the following elements are of note. First, Ukraine was accepted as a candidate country for the Extractive Industries Transparency Initiative (EITI) in 2013 which commits it to preparing regular reports on relevant industries. Its first report, which focused on the oil and gas sectors and included scoping exercises and engagement with stakeholders, was published in December 2015. Second, Naftogaz promotes transparency by regularly publishing information on the prices and volumes of imported gas on its website. Continued publication of the information is expected. Third, the increase of tariffs will require significant engagement. Public awareness campaigns are under implementation (also under the World Bank Social Safety Nets Modernization Project) to inform

[14] This is largely because of demographic factors (mortality rates for working age men are much higher than for women), as gender differences in poverty incidence are relatively moderate (in 2014 8.5 percent of women were poor, against 8.2 of men).

citizens of the rationale behind the price increases and the role of the social assistance program to poorest families.

108. **Involuntary Resettlement.** There will be no involuntary resettlement as a result of the operation and Performance Standard 5 does not apply (see paragraph below).

## F. Environment (including Safeguards)

109. **OP/BP 4.03 World Bank Performance Standards for Private Sector Activities are applied to this guarantee project**: The proposed guarantee is classified as Category B according to OP/BP 4.03 World Bank Performance Standards for Private Sector Activities. The proposed project will not result in a change to the physical infrastructure of the gas delivery and transportation both inside and outside of Ukraine, nor result in changes to existing gas supply in the system. The proposed guarantee is expected to affect factors such as timing of payment and length of gas purchase contracts, but not significantly alter the volume of gas delivered to Ukraine. Since the proposed guarantee will support commercial activities with minimal or no adverse environmental or social risks or impacts, at concept stage the proposed IBRD project was classified as Category C for purposes of OP/BP 4.03. However, given the inherent environmental and social risks related to the transportation and storage of natural gas and the existing pipeline infrastructure, a review of Naftogaz's corporate environmental and social management systems was undertaken with coordination of EBRD. IFC's US$200 million facility was approved by the IFC Board on 17 December 2015, and expected to finance the sale of natural gas to Naftogaz by the gas supplier ENGIE (formerly GDF-Suez). The IFC project was classified as Category B according to IFC's Environmental and Social Review Procedure, principally because of the same environmental and social risks related to the transportation and storage of natural gas and integrity of the existing pipeline infrastructure of both Naftogaz and ENGIE. Although there has been no change to the environmental or social risks since the Project Concept Note (PCN) Review Meeting and no change to the Bank's E&S due diligence, it had been decided to change the classification of the proposed IBRD guarantee project from C to B to make it consistent with IFC's classification. Project preparation occurred concurrently with both the EBRD and IFC parallel facilities, enabling a joint decision-making approach to environmental and social due diligence. The Bank team considered the outcomes of both EBRD and IFC environmental and social due diligence to inform the Bank's due diligence to ensure consistency in safeguards approach. The Bank's due diligence and resulting action plan, based on the safeguards review of the IFC and EBRD, remain valid regardless of when the parallel facilities are or become active.

110. Key environmental and social issues associated with this project include: i) management of environmental, social, health and safety risks associated with Naftogaz and Ukrtransgaz (UTG gas transmission and storage company) operations; ii) management of occupational health and safety (OHS) risks; iii) management of life and fire safety and emergency response; iv) energy efficiency and greenhouse gas emissions associated with gas distribution; and v) human resources management and retrenchment plans. The business practices of Naftogaz are designed to meet European environmental protection policies, and basic safety standards in radiation and environmental protection. Naftogaz code of conduct was adopted in 2014 which covers the principles of Naftogaz's environmental policy. Naftogaz and its subsidiaries are

developing/strengthening its regulations on occupational health and safety based on Ukrainian standards, OHSAS 18001 Occupational, Health and Safety Management Requirements and international norms. The transmission and storage company Ukrtransgaz (UTG) has an environmental health and safety (EHS) system in place and maintains third-party certification for ISO 9001, a quality management system; OHSAS 18001, an occupational health and safety management system; ISO 14001, an environmental management system; and ISO 15001, and an energy management system.

111. The Bank reviewed corporate environmental and social due diligence questionnaires related to Naftogaz's environmental and social management systems, and IFC's Environmental and Social Review Summary (ESRS). The Bank team held several meetings with IFC and EBRD counterparts to discuss a joint approach to environmental and social due diligence. An Environmental and Social Action Plan (ESAP) has been developed with Naftogaz to ensure E&S risks are effectively mitigated. Naftogaz will be required to strengthen its integrated Environmental, Occupational, Health and Safety and Social Management system incorporating the existing procedures consistent with the Performance Standards.

112. The Bank also conducted a media search in both English and Russian languages of the preliminary list of pre-qualified gas suppliers to identify potential EHS reputational risks associated with each gas supplier. Two reviews have been conducted and neither review identified any major EHS incidents, which could potentially exclude them from participating in the facility. All potential gas suppliers will be subject to an EHS reputational risk review as part of the eligibility criteria.

## G. World Bank Grievance Redress

113. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit http://www.inspectionpanel.org.

## ANNEX 1: RESULTS FRAMEWORK AND MONITORING

## UKRAINE: Ukraine Gas Supply Security Facility

**Project Development Objectives:** The Project's Development Objective is to enhance Naftogaz's ability to increase Ukraine's security of gas supply, by providing access to financing and improving the terms of the contracts supported under the Project.

| PDO Level Results Indicators | Core | Unit of Measure | Base-line | Annual Target Values* | | | | | Frequency | Data Source/ Methodology | Responsibility for Data Collection | Description (linked financing sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | YR 1 | YR 2 | YR3 | YR 4 | YR 5 | | | | |
| Private capital mobilized. | ☑ | US$ million | 0 | 500 | 1,000 | 1,500 | n/a | n/a | Semi-Annual | Progress report | Naftogaz, Treasury | IBRD |
| Improvement in gas contract terms within the overall Naftogaz gas contracts portfolio. | ☐ | Yes/No | No | Yes | Yes | Yes | n/a | n/a | Semi-Annual | Progress report | Naftogaz, Gas purchase teams | IBRD |
| Households which use to gas distribution or District Heating. | ☑ | Number | 12.5 million | 12.5 million | 12.5 million | 12.5 million | n/a | n/a | Annual | Progress report | Naftogaz, Financial Department | IBRD |
| of which female members. | ☑ | Percentage | 50 | 50 | 50 | 50 | n/a | n/a | Annual | Progress report | Naftogaz, Financial Department | IBRD |
| INTERMEDIATE RESULTS | | | | | | | | | | | | |
| Intermediate Result (Component A): IBRD Guarantee | | | | | | | | | | | | |
| Number of suppliers with whom Naftogaz has framework agreements in place and which are eligible under the guarantee. | ☐ | Number | N | N | N+1 | N+2 | n/a | n/a | Annual | Progress report | Naftogaz, Gas purchase teams | IBRD |
| Volumes of gas purchased with Project support (based on average forward European gas prices as of May 2016, targets to be updated based on gas | ☐ | bcm | 0 | 2 | 2 | 2 | n/a | n/a | Annual | Progress report | Naftogaz, Gas purchase teams | IBRD |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| prices) | | | | | | | | | | | | |
| Gas supply to consumers from storage during the heating season. | ☐ | bcm | 8.6 | 8.6 | 9.6 | n/a | n/a | n/a | Annual | Progress report | Naftogaz Financial Department | IBRD |
| Publication of the EITI (Extractives Industry Transparency Initiative) report on gas activities. | ☐ | Yes/No | Yes | Yes | Yes | Yes | n/a | n/a | Annual | Progress report | Naftogaz | IBRD |

## ANNEX 2: IMPLEMENTATION ARRANGEMENTS

## UKRAINE: Ukraine Gas Supply Security Facility

### Project Institutional and Implementation Arrangements

1. **The proposed project will be implemented by Naftogaz.** Naftogaz will be responsible for establishing and maintaining the financial and risk management arrangements required for the gas support facility, including setting up the IBRD Revenue Account. Naftogaz will also be responsible for the procurement of the supported gas from eligible gas suppliers, following commercial practices and the Bank's safeguards and procurement requirements.

2. **Naftogaz has a strong team which is responsible for leading project implementation in coordination with relevant stakeholders, including Ukrainian authorities.** The Naftogaz implementation team includes Naftogaz's Deputy Chairman of the Board and Chief Financial Officer, Head of Treasury, Head of Gas Trading, Head of Gas Imports and Customs Clearance, Head of Legal Department, and Chief Advisor to the Chairman of the Board.

### Financial Management Arrangements

3. This is a guarantee operation underpinning Naftogaz's ability to meet operational financial obligations - relating to the procurement and supply of gas – as and when they fall due. The financial management assessment seeks to obtain reasonable assurance that acceptable financial management arrangements are in place to minimize the risk of the guarantee being called and to support the project in meeting its development objectives. The assessment concludes that existing institutional and operational arrangements, together with proposed safeguards measures are sufficient the support the project's objectives and concludes that fiduciary risk is Moderate.

*Financial Management*

4. A review of Naftogaz's institutional structures, corporate governance and FM arrangements observes that there are well established operational arrangements and capacity; there is a track record of operating effectively, business is conducted in accordance with acceptable norms and standards; and Naftogaz is capable of effectively supporting project objectives by billing and receiving revenues from gas supplies. For purposes of safeguarding against guaranteed risks, the following additional measures have been included in the design of the project:

a) Elaborate operational covenants included in the Guarantee Term Sheet;
b) Identification of credible international financial institutions that will issue the Letters of Credit to gas suppliers;
c) Due diligence arrangements, consistent with IBRD procurement guidelines, in the identification of gas suppliers;
d) IMF-advised gas sales revenue management arrangements, together with the establishment of an IBRD Revenue Account through which receipts from gas consumers will flow and be monitored;

e) A requirement for periodic progress reporting to IBRD, including submission of financial reports, with arrangements for timely remedial action; and
f) Arrangements for Ukrainian Government indemnity to IBRD in the event of default and call of the guarantee.

*Audited financial statements*

Naftogaz has well established arrangements for audit of its annual financial statements by independent auditors under standards acceptable to IBRD. Audited financial statements are included in its annual report which is published on the Naftogaz website[15.] During the life of the project, IBRD will require copies of audited financial statements for each financial year to be submitted for review and publication by IBRD in accordance with its access to information policy. Reports will be submitted within 6 months after the end of the period to which they relate.

*Disbursements*

5. Disbursements by IBRD will only occur in the event that the guarantee is called. IBRD will make direct payment to the beneficiary financial institution(s). Ukraine will then be obligated to repay IBRD in accordance with the terms of the Indemnity Agreement.

**Procurement Arrangements**

6. The applicable guidelines under the proposed guarantee facility shall be Guidelines Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, issued January 2011 and revised in July 2014 ("Procurement Guidelines"). Procurement of natural gas to be financed from the guaranteed borrowing shall be done with due regard to the provisions of paragraph 1.5 and 3.18 of the above referenced Procurement Guidelines. World Bank's Anti-Corruption Guidelines for World Bank Guarantee and Carbon Finance Transactions –revised 2014 ("Anti-Corruption Guidelines") shall apply to this Project.

*Bank's due diligence*

7. The Bank's due diligence has been carried out by the Bank task team between September 2015 and November 2015 to establish whether Naftogaz commercial practices with regards to gas purchases meet the World Bank Guarantee criteria of due economy and efficiency. Furthermore, the Bank's due diligence was performed to assess whether (i) procedures used by Naftogaz provide reasonable assurance that the Project will be carried out diligently and efficiently by Naftogaz; and (ii) the natural gas to be procured will be delivered in timely fashion and will be priced so as not to affect adversely the economic and financial viability of the Project. The areas which required improvement in the Naftogaz's gas procurement process were identified, and the principles of an action plan and implementation schedule have been discussed

[15] See http://www.naftogaz.com/files/Zvity/Naftogaz_Annual_Report_2014_engl.pdf

and agreed with Naftogaz (See Table 1). The Due Diligence Report will be available in the Project database as a confidential document as it includes commercial information.

8. Based on the above, it has been found that the gas procurement/trading procedures established by Naftogaz are in line with the industry practices and that the outcome of the gas purchases results in economic solutions, and are therefore be considered to be consistent with the World Bank's Procurement Guidelines with respect to economy and efficiency.

*Procurement implementation capacity*

9. Bank's due diligence further reviewed the organizational structure and staff capacity of Naftogaz and it has been found that overall Naftogaz has adequate capacity to implement the proposed Project efficiently. Some highlights from the Bank's findings in the due diligence report are given below:

a) Naftogaz is a vertically integrated oil and gas company engaged in all aspects of oil and gas exploration and production, transportation, processing and storage, and distribution and supply of natural gas and LPG to consumers. Naftogaz enterprises are responsible for over 76 percent of the gas and 88 percent of the oil produced in Ukraine. Naftogaz is a joint stock company 100 percent owned by the Ukrainian government.
b) Naftogaz is subject to Public Procurement Law No. 2289-XI of Ukraine with an exception to natural gas procurement and natural gas procurement financing as per Article 2(4) of the same Law. In general, Naftogaz has written procedures for general internal business transaction processes including documentation, contracting, payment approval matrix which are available to all internal departments. These apply to gas procurement transactions as well. All contracts are signed by the Chairman of the Board and Chief Executive Officer (CEO) of Naftogaz or by the Deputy Chairman, or by a Director of Naftogaz by Power of Attorney.
c) All original copies of closed contracts and associated deal approval sheets are stored in the Naftogaz archive for a minimum duration of 10 years as per Naftogaz's Archive Regulation.
d) A separate external audit department executes regular checks with every individual gas contract, in order to audit the followed procedure and payments. The audit department is part of the government.
e) The employees of Naftogaz are not civil servants and not paid from the government's budget. The majority of the commercial staff has a master degree of a Ukrainian university. Key staff are selected competitively upon their interest to the open positions advertised in Naftogaz's website.
f) Naftogaz operates under the Law of Ukraine. Naftogaz also has an internal written "Code of Corporate Ethics" which establishes the corporation principles binding its employees in performing their works.
g) EBRD will provide technical assistance to support improving Naftogaz's procurement processes and systems. In particular, a simple Commodity Trading Risk Management (CTRM) system, based on current systems and budget, would be implemented.

*EBRD-supported contracts*

10. In addition to the World Bank guarantee facility, recently, EBRD approved a US$300 working capital facility for supporting the gas supply security in Ukraine. EBRD and Naftogaz negotiated and agreed the procurement procedures that will be applicable under the financing by EBRD, which were established based on the EBRD's procurement policies and procedures. EBRD procurement procedures bring a number of variations to the current Naftogaz practices especially on pre-qualification where gas suppliers which are neither state-owned nor publicly traded were not eligible; a formal pre-advertised procedure followed; and a tendering process was designed for the purpose of procuring the individual gas contracts. The procurement procedure introduced by EBRD is a modified version of regular international competitive procurement of goods with pre-qualification. Furthermore, EBRD procedures require the use of the European Federation of Energy Traders (EFET) Standard General Agreement of Gas (Current contracts signed by Naftogaz does not differ substantially from EFET standard agreement). Although, the procedure followed by the EBRD financing is consistent with the Bank's core procurement principles, it is new to the Ukrainian market.

*Agreed Action Plan*

11. As indicated above the gas procurement/trading procedures established by Naftogaz are in line with industry practices. However, the Bank team has identified a set of actions for further improvement of Naftogaz's procedures and processes to ensure that the Bank's fiduciary requirements related to "economy" and "efficiency" are met (See Table 1). The action plan includes conditions for the eligibility of gas suppliers, gas supply agreements and individual gas contracts. While the principles of the action plan have been agreed with Naftogaz, the finalized action plan wording will be agreed as part of the negotiation of the legal documentation for the Guarantee:

**Table 1. Agreed Principles for Action Plan with Naftogaz**

| **Action Group and No.** | **Recommendation and Agreed Action** | **Responsible Party** | **Time Frame** |
|---|---|---|---|
| **A.** | ***Pre-qualification*** | | |
| 1. | Naftogaz shall advertise a Request for Expression of Interest (RfEOI) on its website annually. | Naftogaz | Throughout the Project |
| 2. | A Conflict of Interest (COI) provision, which reads that suppliers (including their personnel) do not have a close business or family relationship with professional staff of Naftogaz who are directly or indirectly involved in gas trading/procurement, shall be signed by gas suppliers. Companies that do not sign the COI declaration do not fall under the WB facility. | Naftogaz | Before effectiveness and throughout the Project |
| 3. | All framework agreements supported under the facility shall include a reference to adherence to the World Bank Anti-Corruption Guidelines for World Bank Guarantee, Carbon | Naftogaz | Before effectiveness and throughout |

| | | | |
|---|---|---|---|
| | Finance Transactions –revised 2014 (“Anti-Corruption Guidelines”) with an addendum to the framework contract, change in framework contract or a separate letter. | | the Project |
| B. ***Sourcing and contracting*** | | | |
| 4. | Naftogaz shall always source the gas from the cheapest evaluated supplier, whether Eastern or Western, based on evaluation in accordance with Naftogaz’s procurement process and applicable Ukraine legislation. In particular, Ukraine legislation regarding diversification of gas supply limits supplies from any single supplier. | Naftogaz | Throughout the Project |
| 5. | All current framework agreements acceptable to the World Bank and concluded with eligible gas suppliers shall be included under the IBRD facility. All new contracts shall be closed under the EFET standards unless situation requires otherwise. | Naftogaz | Throughout the Project |
| 6. | The minimum individual contract shall be Month Ahead, or Balance of Month during the winter season. No spot transactions (Within Day, Day-Ahead, or Balance of Month outside of the winter seasons) will be eligible under the WB facility. The minimum amount per individual contract is US$15 million[16], or any other value agreed by IBRD in advance, in writing, at its sole discretion. | Naftogaz | Throughout the Project |
| 7. | Only fixed price, post-payment individual contracts will be eligible under the Project, unless agreed by IBRD in advance, in writing, at its sole discretion. | Naftogaz | Throughout the Project |
| 8. | All cross-border points and Virtual Trading Points are suitable for delivery points. The guarantee shall not be provided for deliveries at border points where official undisputed metering cannot be executed. | Naftogaz | Throughout the Project |
| 9. | Naftogaz’s analysts shall create a daily benchmark report with analysis of contract volumes and prices, expected demand and market outlook. This benchmark shall be shared with management and all relevant commercial personnel, and kept for a minimum of one year. | Naftogaz | Throughout the Project |
| 10. | In case of approaching European suppliers, Naftogaz shall approach at least 3 pre-qualified suppliers for an indicative offer. These 3 suppliers may not be the same for every indicative offer request. All pre-qualified bidders shall be asked for quotation at least once in every four bids. Unsolicited bids from the prequalified bidders shall be accepted for bid evaluation. | Naftogaz | Throughout the Project |
| 11. | Naftogaz shall decide the time of sourcing of the individual gas contracts. | Naftogaz | Throughout the Project |
| ***C. Approvals and procedures*** | | | |

[16] The minimum amount per individual contract will be negotiated with the international financial institutions as part of the legal agreements.

| | | | |
|---|---|---|---|
| 12. | The deal evaluation/approval sheet shall contain a deal summary with at least the following information: supplier recommended for a contract award, duration, unit price, contract amount, indicative and negotiated prices of other suppliers. Minimum 3 staff of RBD department shall sign the evaluation sheet. | Naftogaz | By end March 2017 |
| 13. | Naftogaz will write up the current procurement procedures and strategy based on current practice, applicable Ukraine legislation, and actions agreed with the World Bank, and share internally. | Naftogaz | By end July 2017 |
| 14. | Annual audit or other form of attestation of Individual Contracts and process shall be performed by a duly qualified independent entity, acceptable to the World Bank for which the Terms of Reference (TOR) are prior agreed by the World Bank. The annual audit report shall be submitted to the World Bank not later than June 30th of each calendar year for the audit covers the period of 01 January-31 December of the previous year. First audit report shall be submitted on March 31, 2017 or other date agreed by the Bank. The audit shall cover:<br>● compliance of the procurement procedures, documentation and decisions with the Project Agreement;<br>● appropriateness of the procurement/contracting processes and decisions;<br>● compliance of the completed gas deliveries with the requirements and specifications defined in the contract;<br>● cost effectiveness of contracts. | Naftogaz/ WB shall review the TOR | Throughout the Project/TOR will be provided to the Bank by |
| 15. | Registration of all indicative and firm bids shall be recorded in an excel file that can be shared for auditing purposes. Moreover, printed emails with indicative bids will be filed with all documentation related the particular deal. | Naftogaz | Throughout the Project |

*Bank review of procurement transactions*

12. The Bank will conduct reviews of the procurement transactions, and of the reports from the annual audit or other form of attestation. The first review of the Bank will be done at the end of second month following effectiveness. If needed, bimonthly reviews will continue until the Bank is satisfied with the implemented procedures and the reviews will be carried out semi-annually thereafter. The Bank's review shall also include the above agreed action plan. The Bank's review shall be undertaken either by Bank staff or by a consultant employed by the Bank.

**Environmental and Social (including safeguards)**

13. Refer to sections VI.E and VI.F.

**Monitoring & Evaluation**

14. Monitoring and evaluation will be focused on four specific areas: (i) implementation of the guarantee structure, (ii) implementation of the gas procurement process for gas purchases supported under the guarantee, (iii) Naftogaz' financial situation, and (iv) broader macroeconomic situation and sector reform progress.

15. **Implementation of the guarantee structure.** Following effectiveness it will be necessary to pay particularly close attention to the implementation of the letters of credit in support of individual gas contracts. This is because the number of gas suppliers and gas contracts could lead to a substantial number of letters of credit being issued and monitored by the agent bank acting for the commercial providers. The agent would be expected to monitor: (i) the number and aggregate amount of L/Cs and advances made in the preceding month(s); (ii) the aggregate amount of the L/Cs and advances outstanding at that time; (iii) amounts of any draw under any L/C and advance outstanding; (iv) amount of repayments in respect of L/Cs drawns or advances. The agent would provide monthly reports for the first six months from effectiveness, and quarterly reports thereafter.

16. In addition, and outside of exceptional events such as "warning events" and "acceleration events", regular reporting by the IBRD Revenue Account bank would be made, as follows. At each quarter, a test would be carried out by the IBRD Revenue Account bank to measure the level of deposits made into the IBRD Revenue Account from Priority 1, Priority 2 and Priority 3 sources of revenue. The results of these tests would be provided to Naftogaz and IBRD for information, but would not require action to be taken by either party. If a financial covenant is not met and action regarding the closing of the IBRD Revenue Account is therefore required, that action would be taken automatically by the IBRD Revenue Account bank and IBRD would not have discretion to provide any waivers. The IBRD Revenue Account is therefore a centrepiece of financial monitoring insofar as the guarantee itself is concerned.

17. **Implementation of the procurement process.** A short report on the procurement of gas contracts supported under the guarantee is expected to be provided to IBRD by Naftogaz. That report would focus on the procurement arrangements agreed as a part of the guarantee facility and pay particular attention to whether the commercial terms that Naftogaz is receiving are proving beneficial. The report would also include a summary of each individual contract supported under the facility during the reporting period. The report would be submitted by Naftogaz on a bi-monthly basis, until the Bank is satisfied with the implemented procedures, and the reviews will be carried out semi-annually thereafter. The details of the reporting arrangements would be negotiated as part of the legal documentation for the Guarantee.

18. **Naftogaz's financial situation:** Other quarterly monitoring requirements would involve receipt from Naftogaz of its quarterly financial statements and information published quarterly by the company regarding gas volumes and prices, particularly with regard to imports. In addition, the level of gas that has entered storage and the extent to which this matches Naftogaz's forward plans for pre-heating season peak storage will also be reviewed.

19. **An annual review will be arranged around the end of February 2017 and February 2018, respectively.** The annual review would consider, amongst others: (i) the projected Naftogaz financials for the year ahead, (ii) the audited financial statements for the prior year, and

the audited quarterly financial statements for the current year; (iii) the monthly, bi-monthly, quarterly, semi-annual reports, as the case may be, from the agent, the IBRD Revenue Account bank, and Naftogaz's gas purchases teams; (iv) Ukraine's adherence to the IMF Extended Financing Facility and also examine the general political and macroeconomic environment. This would provide an opportunity to consider whether they are issues outside of the energy industry and Naftogaz domain that might have negative impact on the guarantee facility. Based on the outcome of the annual reviews, it is possible, for example, that the facility may require some adjustment to reflect evolving conditions. These conditions could be both positive and negative, leading to discussions about whether the facility amount should be revised downwards or whether an additional financing might be required. In this context, it is possible that at some future point it would be beneficial for Naftogaz to extend the availability of the guarantee facility to domestic gas producers to help incentivize higher levels of local production. Finally, while the Ministry of Finance has a "glide path" of reducing support for Naftogaz over time, the annual review process would provide an opportunity to discuss what levels of ongoing support are needed.

## ANNEX 3: IMPLEMENTATION SUPPORT PLAN

## UKRAINE: Ukraine Gas Supply Security Facility

1. Strategy and approach for implementation support. The strategy for implementation support has been developed on the basis of the nature of the Project, and to ensure that the World Bank's resources and staff are sufficient to supervise and support implementation.

### Main areas of supervision

2. First phase: Technical implementation support will focus on ensuring (i) timely establishment of the credit arrangements with the financial institutions, (ii) finalization and approval of legal documentation, and (iii) completion of pre-qualification of eligible gas suppliers and eligible Gas Supply Agreements. Specialized expertise will be mobilized as required.

3. Second phase: After effectiveness is reached, Bank team support will focus on monitoring (i) the key performance indicators associated with the guarantee structure and the operation of the revenue account, (ii) the financial management aspects of the Project including review of audited financial statements, and (ii) the procurement process followed and individual contracts concluded under the Project. The Bank team will include HQ and country-based staff and consultants, complemented with specialized expertise as required.

### Overall Support Implementation Needs

4. The Bank team should be composed of a mix of skills and experience for successful project implementation. The tables below outline the expected staff weeks and travel required for implementation support.

| Time | Focus | Skills Needed | Annual Resource Estimate (US$000) | Partner Role |
|---|---|---|---|---|
| First Phase (approximately 3 months) | Establishment of credit arrangements with financial institutions. Finalization and approval of legal documentation. Completion of pre-qualification of gas suppliers and Gas Supply Agreements. | Structured finance, financial analyst, legal, procurement, environmental and social. | 100 | Close cooperation of Naftogaz, Government of Ukraine, financial institutions, gas suppliers. |
| Second Phase (approximately 36 months) | Review of financial and procurement performance; monitoring and evaluation; safeguards; financial management. | Sector regulatory and planning, M&E specialist, financial analyst, legal, procurement, environmental and social. | 170 | Close cooperation of Naftogaz, Government of Ukraine, financial institutions, gas suppliers. |

The table below clarifies the skills and level of effort required for ongoing implementation after effectiveness.

| Skills Needed | Number of Staff Weeks per year | Number of Trips per year |
|---|---|---|
| Co-Team Leader | 6 | 3 |
| Co-Team Leader (Guarantee) | 6 | 3 |
| Financial analyst | 3 | 2 |
| Procurement specialist | 3 | As required |
| Oil and gas specialist | 3 | As required |
| Specialised technical experts | 3 | As required |
| Legal | 3 | 2 |
| Financial Management specialist | 3 | 2 |
| Economist | 2 | 0 – Field staff |
| Environmental specialist | 3 | 0 |
| Social specialist | 3 | 0 |
| Monitoring and evaluation expert | 3 | 2 |
| Administrative support | 3 | 0 – Field staff |

## ANNEX 4: ECONOMIC AND FINANCIAL ANALYSIS

## UKRAINE: Ukraine Gas Supply Security Facility

### A. Economic Analysis

### Methodology and assumptions

1. The economic viability of the Project is assessed based on a traditional cost-benefit analysis. The analysis is restricted to the Project activities that generate benefits for which an economic value - intended as welfare gain accruing to society as a whole - can be clearly identified and measured.

2. The economic analysis was conducted comparing the economic cost of meeting the heating and cooking demand of residential consumers under "with project" and "without project" scenarios. The "with project" scenario will allow meeting household demand for heating using the average amount of about 2 bcm of annual gas purchases that can be supported when the IBRD guarantee facility is made available to Naftogaz.

3. The analysis takes a conservative approach in which:
   a. Only the economic costs to the District Heating and gas distribution users, which account for 90 percent of the usage of gas during winter months, are measured;
   b. The economic costs to the District Heating companies are used as a reference, given the higher efficiency and lower transmission losses of the gas distribution system when compared with District Heating.

4. The main assumptions are based on (i) data from the Ministry of Energy and Coal Industry regarding the installed capacity and operation of the various power plants in Ukraine; (ii) data from the World Bank ESMAP report "Modernization of the District Heating Systems in Ukraine: Heat Metering and Consumption-Based Billing" regarding the technical characteristics of the District Heating system in Ukraine; and (iii) data regarding the Ukrainian power system losses and coal plant efficiency, as well as parameters for coal cost and consumption. These are summarized in Tables 1, 2 and 3 below. Additionally, the economic cost of CO2 emissions was estimated based on a carbon intensity for coal and for gas of 850 g/kWh and 416 g/kWh, respectively, and a social cost of CO2 emissions of US$35/tonne, based on the World Bank Guidance Note on Social Value of Carbon in Project Appraisal.

**Table 1: Installed Power Capacity in Ukraine**

| | | |
|---|---|---|
| Total available capacity | 48,960 | MW |
| Total available coal fired capacity | 18,700 | MW |
| Total available gas fired capacity | 11,050 | MW |
| Total available nuclear | 13,110 | MW |
| Total HPP | 5,500 | MW |
| Other | 600 | MW |
| Available capacity to meet peak load without gas | 33,185 | MW |
| Peak load | 28,000 | MW |

**Table 2: Technical parameters for District Heating companies**

| | | |
|---|---|---|
| Plant-gate price for DH companies in 2015 | US$247 | tcm |
| Total additional gas sold to DH companies to serve residential demand | 1,800,000 | tcm |
| Average efficiency of boilers of DH companies | 85% | |
| Total heat generated by DH companies | 12,432,780 | Gcal |
| Energy lost in T&D network | 18% | |
| Net supply to residential users | 10,194,880 | Gcal |
| Share of gas cost in total cost of supply of DH | 85% | |

**Table 3: Parameters for increased coal generation**

| | | |
|---|---|---|
| Power system losses | 11% | |
| Plant-gate price of imported thermal coal | US$70 | /tonne |
| Heating value of coal | 6000 | kcal/kg |
| Average efficiency of coal power plants | 30% | |
| Cost of coal per kWh of generation | US$0.0334 | kWh |
| Other variable non-fuel O&M | US$0.01 | kWh |
| Total variable cost | US$0.0434 | kWh |

**Results**

5. Based on the assumptions above, the economic benefit of the Project is estimated at about US$50 million per year, excluding the social costs of CO2 emissions. When the latter are included, the economic benefit increases to about US$250 million per year.

**Sensitivity analysis**

6. A switching value analysis was carried out to assess the increase of gas prices required to negate the economic benefits calculated. Gas prices would have to increase by about 65 percent against current average forward import prices, for the costs of electric heating based on coal generation and including the social costs of CO2 emissions to become comparable with the costs of District Heating. Imported gas prices would have to be in excess of the 95th percentile price projections over the next three years, an unlikely event.

## B. Financial Statements Analysis

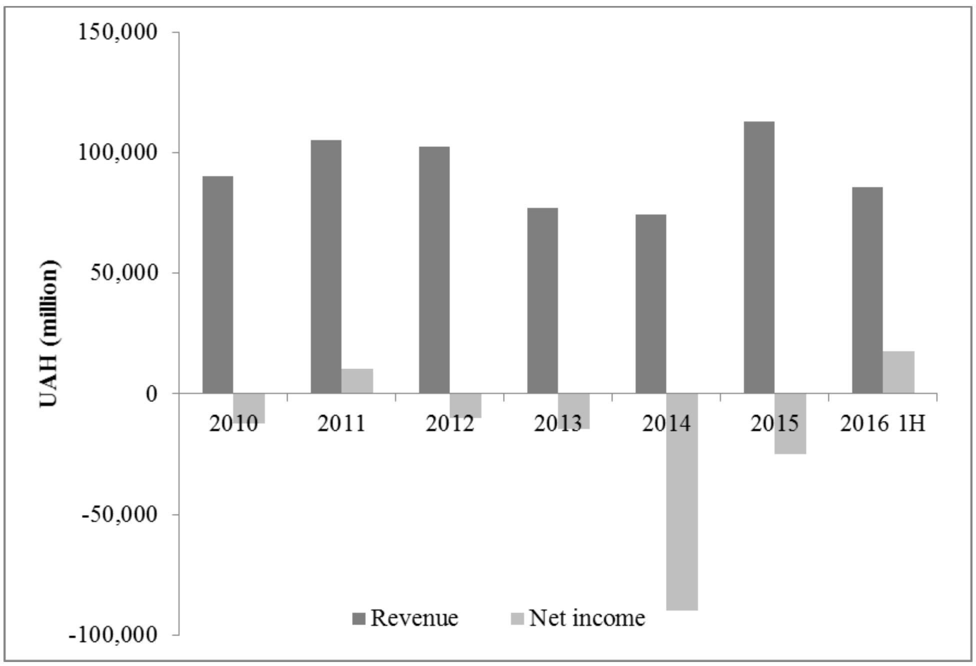
**Audited financial statements for 2015**

1. The financial statements for 2015 were prepared with a qualified audit opinion which suggests limited financial transparency in the information provided for the year ending 31 December 2015. The qualified opinion stems from unreliability related the carrying value and financial results of subsidiaries, recoverability of receivables of an associate company, and the amount of provisioning for on-going litigations. Naftogaz also made available its unaudited and condensed financial results for the first half of 2016, which have been incorporated in the financial statement analysis.

## Revenues and net income

2. While revenues have steadily declined in recent years, there was a significant increase in 2015 which was followed by strong half year revenue in 2016 and a return to profitability. The net loss in 2015 was UAH25.1 billion, a significant improvement from the preceding year (Figure 1), which had a net loss of UAH89.9 billion. The latter was primarily due to UAH39 billion in foreign exchange losses related to currency depreciation, losses on gas sales of UAH18.4 billion and losses of UAH19.6 billion incurred in Crimea and other conflict areas. The decline in revenues also reflected the net movement in provision for trade accounts receivable, prepayments, and the write-down on inventories and value added tax (VAT).

**Figure 1: Revenues vs. Net Income/Loss, UAH Millions, 2010-2016 1H**



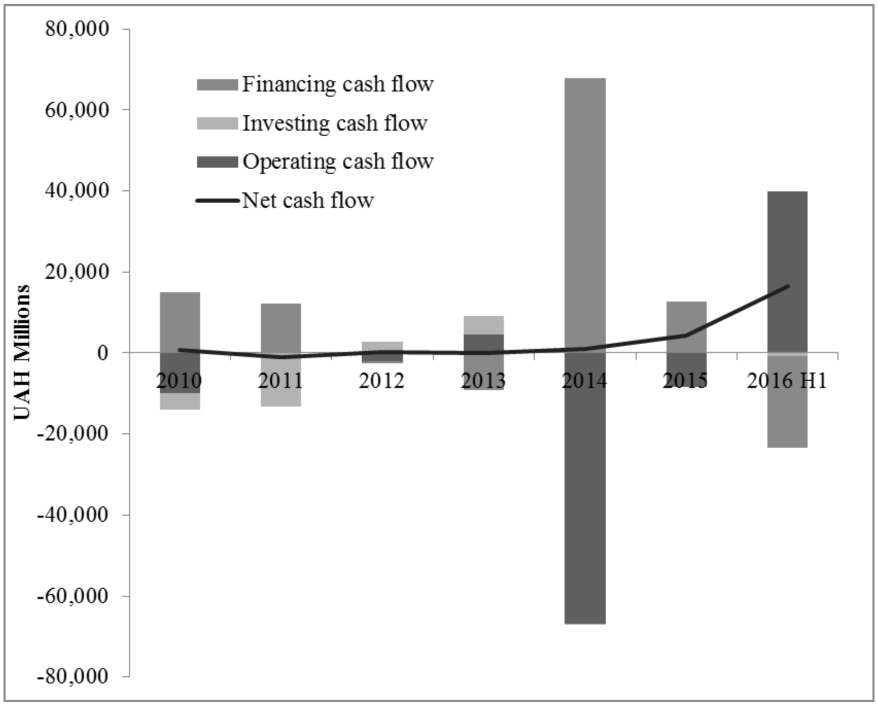

*Source: Naftogaz's audited IFRS financial statements for 2010-2015 and unaudited financial statements for half year 2016*

## Cash flows

3. Naftogaz's net cash flow has been considerably improving since 2014 (Figure 2). Operating cash flows declined significantly in 2014 due to working capital outflows related to lower receivables from Crimea and other conflict areas as well as back-payments to Gazprom and reduced collections in Crimea. The operating cash flow deficit of UAH67 billion (US$4.2 billion) was covered by proceeds from the sale of State Treasury bonds in the amount of UAH95.6 billion. As indicated in the abbreviated statement of cash flows, the contribution of the State Treasury increased by more than 12 times from UAH8 billion in 2013 to UAH96.6 billion in 2014. In 2015, the operating cash flow deficit of UAH8.3 billion was also covered by proceeds from the sale of State Treasury Bonds of UAH29.7 billion. By contrast, the first half of 2016 was marked by strong operating cash flows and repayment of borrowings. The net cash

flow of UAH16.6 billion is an encouraging sign that the company's finances may be finally turning around, although a more meaningful comparison can only be made when audited full year 2016 results become available.

**Figure 2: Cash Flow Breakdown, UAH Millions, 2010-2016 1H**




*Source: Naftogaz's audited IFRS financial statements for 2010-2015 and unaudited financial statements for half year 2016*

## Balance sheet

4. The amount of Property Plant and Equipment (PPE) increased considerable from UAH181 billion 2013 to UAH320 billion 2014 due to the revaluation of all asset classes. This was the first significant revaluation since 31 December 2009 and a result of significant economic developments which included changes in natural gas transportation tariffs and costs of Naftogaz's own natural gas consumption and construction activities. In 2015, the amount of PPE remained relatively steady at UAH289 billion. The unaudited first half year results from 2016 would indicate further increase in the carrying value of PPE, to be confirmed during audit of the full year results.

5. Naftogaz's liquidity position has been strengthening, suggesting an improved ability to meet current payables, albeit challenges remain. In the first half of 2016, its current ratio, which is the ratio of current assets available to cover current liabilities (Current Assets/Current Liabilities), maintained the improved situation in 2015. Notably, Naftogaz's debt service coverage ratio (DSCR), which indicates ability to meet near term debt obligations, became

positive (Table 4) after years of negative values[17]. According to Naftogaz, all effective requirements of credit agreements continue to be met in full and in due term; in particular, in 2015 Naftogaz repaid a US$1.6 billion Eurobond issue. The improvement in Naftogaz's current ratio since 2013 is primarily due to the decline in gas supply advances and associated payables, reduction in amounts payable to Gazprom, increase in prepayments and overall improvement in gas sales cost recovery. The improvement in liquidity suggests some alleviation of the past concerns related to Naftogaz's ability to obtain trade credit and secure advance delivery of gas.

**Table 4: Naftogaz's Liquidity Position 2010-2016 1H**

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 1H |
|---|---|---|---|---|---|---|---|
| Current Ratio | 1.14 | 1.29 | 1.09 | 0.44 | 1.02 | 1.24 | 1.18 |
| DSCR | (0.54) | (0.49) | (0.19) | 0.13 | (1.74) | (2.08) | 1.41 |

*Source: Naftogaz's audited IFRS financial statements for 2010-2015 and unaudited financial statements for half year 2016*

## Consolidated financial statements[18]

6. Naftogaz's audited consolidated financial statements are provided in Tables 5, 6 and 7 for years 2010-2014. Naftogaz's audited separate financial statements were used for 2015. The tables also include the company's unaudited consolidated financial results for the first half of 2016.

[17] A negative DSCR ratio indicates that no cash is available for debt service as not even mandatory operating expenses or taxes could be met.

[18] Source: Naftogaz's audited IFRS financial statements for 2010-2015 and unaudited financial statements for half year 2016

## Table 5: Naftogaz Income Statement, 2010-2016 1H

| *Millions* | 2010 UAH | 2010 USD | 2011 UAH | 2011 USD | 2012 UAH | 2012 USD | 2013 UAH | 2013 USD | 2014 UAH | 2014 USD | 2015UAH | 2015 USD | 2016 UAH 1H | 2016 USD 1H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 90,192 | 11,345 | 105,051 | 13,066 | 105,038 | 13,048 | 75,374 | 9,147 | 74,412 | 4,704 | 112,762 | 4,693 | 85,622 | 3,457 |
| Subsidies from State Budget | 3,424 | 431 | - | - | 3,900 | 484 | - | - | - | - | - | - | | - |
| Cost of Sales | 82,230 | 10,343 | 96,653 | 12,022 | 116,413 | 14,461 | 76,126 | 9,239 | 85,383 | 5,397 | 100,228 | 4,171 | 49,467 | 1,997 |
| **Gross Profit** | **11,386** | **1,432** | **8,398** | **1,045** | **(7,475)** | **(929)** | **(752)** | **(91)** | **(10,971)** | **(693)** | **12,534** | **522** | 36,155 | **1,460** |
| | | | | | | | | | | | | | | |
| Other operating income | 1,132 | 142 | 16,817 | 2,092 | 1,068 | 133 | 749 | 91 | 234 | 15 | 4,914 | 205 | 1,415 | 57 |
| Other operating expenses | 13,740 | 1,728 | 4,497 | 559 | 15,776 | 1,960 | 6,778 | 823 | 52,714 | 3,332 | 12,899 | 537 | 11,787 | 476 |
| **Operating profit/loss** | **(1,222)** | **(154)** | **20,718** | **2,577** | **(22,183)** | **(2,756)** | **(6,781)** | **(823)** | **(63,451)** | **(4,011)** | **4,549** | **189** | 25,783 | **1,041** |
| | | | | | | | | | | | | | | - |
| Net Finance Costs | 5,495 | 691 | 8,476 | 1,054 | 9,196 | 1,142 | 8,868 | 1,076 | 7,702 | 487 | 7,943 | 331 | 3,221 | 130 |
| Investment income | 44 | 6 | 157 | 20 | 469 | 58 | 206 | 25 | (6,546) | (414) | (4,803) | (200) | 91 | 4 |
| Other income | | - | | - | 542 | 67 | 536 | 65 | 0 | 0 | 4 | 0 | - | - |
| Other costs | | - | | - | 457 | 57 | - | - | - | - | - | - | - | - |
| Foreign Exchange loss, net | 30 | 4 | 247 | 31 | - | - | 585 | 71 | 12,209 | 772 | 16,903 | 703 | 2,734 | 110 |
| **Profit/Loss before tax** | **(6,703)** | **(843)** | **12,152** | **1,511** | **(30,825)** | **(3,829)** | **(15,492)** | **(1,880)** | **(89,908)** | **(5,683)** | **(25,096)** | **(1,044)** | **19,919** | **804** |
| | | | | | | | | | | | | | | - |
| Income Tax | 4,810 | 605 | 2,352 | 293 | 641 | 80 | 1,591 | 193 | 46 | 3 | - | - | 2,458 | 99 |
| Profit/Loss from continuing operations | (11,513) | (1,448) | 9,800 | 1,219 | (31,466) | (3,909) | (17,083) | (2,073) | (89,908) | (5,683) | (25,096) | (1,044) | 17,461 | 705 |
| Profit from discontinued operations | (642) | (81) | 735 | 91 | - | - | (874) | (106) | - | - | - | - | - | - |
| **Profit/Loss for the reporting period** | **(12,155)** | **(1,529)** | **10,535** | **1,325** | **(31,466)** | **(3,958)** | **(17,957)** | **(2,259)** | **(89,954)** | **(5,683)** | **(25,096)** | **(1,044)** | **17,461** | **705** |
| | | | | | | | | | | | | | | |
| Profit/Loss, attributable to: | | | | | | | | | | | | | | |
| Parent's Owners | (11,980) | (1,507) | 10,218 | 1,271 | (31,466) | (3,909) | (14,681) | (1,782) | (89,954) | (5,686) | (25,096) | (1,044) | - | - |
| Non-controlling interest | (175) | (22) | 317 | 39 | - | - | (3,276) | (398) | - | - | - | - | - | - |
| | | | | | | | | | | | | | | |
| **Profit/Loss for the reporting period** | **(12,155)** | **(1,529)** | **10,535** | **1,310** | **(31,466)** | **(3,909)** | **(17,957)** | **(2,179)** | **(89,954)** | **(5,686)** | **(25,096)** | **(1,044)** | **17,461** | |

**Table 6: Naftogaz Abbreviated Statement of Cash Flows, 2010-2016 1H**

| **UAH M** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016 1H** |
|---|---|---|---|---|---|---|---|
| Operating Cash Flow | (9,942) | (137) | 2,970 | 7,155 | (66,948) | (8,318) | 39,979 |
| Investing Cash Flow | (4,044) | (13,100) | (9,728) | (3,231) | (42) | 80 | (696) |
| Financing Cash Flow | 14,860 | 12,123 | 7,064 | (3,815) | 67,948 | 12,638 | (22,658) |
| **Change in Cash** | **874** | **(1,114)** | **306** | **109** | **958** | **4,400** | **16,625** |
| **Ending Cash Balance** | **1,540** | **2,654** | **2,029** | **2,138** | **3,096** | **7,496** | **25,595** |
| | | | | | | | |
| Contribution of State Treasury | 63 | 120 | 6,000 | 8,000 | 96,610 | 29,700 | -1,020[19] |
| | | | | | | | |
| X/R | 7.95 | 8.04 | 8.05 | 8.24 | 15.82 | 24.03 | 24.77 |
| | | | | | | | |
| **USD M** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016 1H** |
| Operating Cash Flow | (1,251) | (17) | 369 | 868 | (4,232) | (346) | 1,614 |
| Investing Cash Flow | (509) | (1,629) | (1,208) | (392) | (3) | 3 | (28) |
| Financing Cash Flow | 1,869 | 1,508 | 878 | (463) | 4,295 | 526 | (915) |
| **Change in Cash** | **110** | **(139)** | **38** | **13** | **61** | **183** | **671** |
| **Ending Cash Balance** | **194** | **330** | **252** | **259** | **196** | **312** | **1,033** |
| | | | | | | | |
| Contribution of State Treasury | 8 | 15 | 745 | 971 | 6,107 | 1,236 | -41 |

**Table 7: Naftogaz Abbreviated Balance Sheet, 2010-2016 1H**

| **UAH M** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016 1H** |
|---|---|---|---|---|---|---|---|
| Current Assets | 58,202 | 66,865 | 67,211 | 43,102 | 68,592 | 92,015 | 103,652 |
| Non-Current Assets | 135,475 | 148,615 | 202,527 | 194,816 | 368,228 | 364,940 | 576,423 |
| **Total Assets** | **193,677** | **215,480** | **269,738** | **237,918** | **436,820** | **456,954** | **680,075** |
| | | | | | | | |
| Current Liabilities | 50,899 | 51,814 | 61827 | 96,995 | 67,201 | 74,415 | 88,149 |
| Non-Current Liabilities | 61,355 | 56,039 | 58,094 | 33,888 | 26,612 | 35,436 | 120,501 |
| Equity | 81,423 | 107,627 | 149,817 | 107,035 | 343,008 | 347,104 | 471,425 |
| **Total Liabilities and Equity** | **193,677** | **215,480** | **269,738** | **237,918** | **436,820** | **456,954** | **680,075** |
| | | | | | | | |
| X/R | 7.95 | 8.04 | 8.05 | 8.24 | 15.82 | 24.03 | 24.77 |
| | | | | | | | |
| **USD M** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016 1H** |
| Current Assets | 7,321 | 8,317 | 8,349 | 5,231 | 4,336 | 3,829 | 4,185 |
| Non-Current Assets | 17,041 | 18,484 | 25,159 | 23,643 | 23,276 | 15,188 | 23,271 |

[19] Indicates dividends paid by Naftogaz into the State Budget.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Total Assets** | **24,362** | **26,801** | **33,508** | **28,874** | **27,612** | **19,018** | **27,456** |
| | | | | | | | |
| Current Liabilities | 6,402 | 6,445 | 7,680 | 11,771 | 4,248 | 3,097 | 3,559 |
| Non-Current Liabilities | 7,718 | 6,970 | 7,217 | 4,113 | 1,682 | 1,475 | 4,865 |
| Equity | 10,242 | 13,386 | 18,611 | 12,990 | 21,682 | 14,446 | 19,032 |
| **Total Liabilities and Equity** | **24,362** | **26,801** | **33,508** | **28,874** | **27,612** | **19,018** | **27,456** |

## C. Financial Analysis

7. The World Bank guaranteed working capital facility represents a new source of financing and Naftogaz expects to revolve the facility at least three times during its two-year availability period 2016-2018. The main benefit for Naftogaz is access to a large amount of working capital financing which otherwise would not be available to Naftogaz, or only at a significantly higher cost.

8. A financial model was prepared to forecast Naftogaz's cash flows during the 2016-2019 period (including the two-year availability period and one additional year repayment period) when the credit facility is expected to be operating. The base case was developed in light of the expected sector reforms and market liberalization, and several sensitivities were run to test the financial impact of critical assumptions.

9. The base case projection indicates that Naftogaz's operating profitability is improving and that Naftogaz generates a positive operating cash flow of about US$360 million by the end of 2019, up from a negative operating cash flow of US$256 million in 2016. A key driver behind improving profitability are the continued adjustment of tariffs to reflect 100 percent gas import price parity, during the next three years. Several sensitivities were performed, including the impact of currency depreciation, lower collections efficiency and fall in revenue; the sensitivities overall confirm that Naftogaz would have the ability to reimburse the draws under the World Bank facility. The World Bank's Guarantee is not called either in the base case or any of the downside scenarios.

## ANNEX 5: INDICATIVE TERMS AND CONDITIONS OF THE PROPOSED GUARANTEE

### UKRAINE: Ukraine Gas Supply Security Facility

### SUMMARY OF INDICATIVE TERMS AND CONDITIONS OF AN IBRD GUARANTEE OF A CREDIT FACILITY ISSUED BY ONE OR MORE FINANCIAL INSTITUTIONS (OR AN AGENT ON THEIR BEHALF) IN SUPPORT OF PAYMENTS UNDER NATURAL GAS SUPPLY AGREEMENTS BETWEEN NATIONAL JOINT STOCK COMPANY "NAFTOGAZ OF UKRAINE" AND GAS SUPPLIERS (PROJECT)

*The provision of the Guarantee is subject, inter alia, to satisfactory appraisal by the International Bank for Reconstruction and Development (IBRD) of the Project, compliance with all applicable policies of the IBRD, including those related to environmental and social safeguards and anti-corruption guidelines, review and acceptance of the ownership, management, corporate governance, financing structure, and transaction documentation for the Project, and the approval of senior management and the Board of Executive Directors of the IBRD in their sole discretion. All terms and conditions of this draft term sheet are therefore subject to change.*

| **IBRD GUARANTEED CREDIT FACILITY** | |
|---|---|
| **Credit Applicant:** | National Joint Stock Company "Naftogaz of Ukraine" (NAK, or Credit Applicant), as "Buyer" under Eligible Gas Supply Agreements (as defined below) with Credit Beneficiaries (as defined below). |
| **IBRD Guaranteed Credit Facility (or Credit Facility):** | A credit facility[20] for the provision of:<br><br>(i) individual standby letters of credit (L/Cs); and<br>(ii) loans (Loans);<br><br>by the Financial Institution, or by the agent in relation to a syndicate of Financial Institutions (Agent), at the request of the Credit Applicant in favor of each Credit Beneficiary.<br><br>The Credit Applicant's obligations to repay the Financial Institution, or the Agent on behalf of the Financial Institutions, amounts drawn under a Credit (as defined below) will be guaranteed by IBRD, up to the Maximum Credit Facility Amount (as defined |

[20] The allocation under the Credit Facility as between L/Cs and Loans remains to be discussed.

| | |
|---|---|
| | below), plus accrued interest. Any amounts drawn by a Credit Beneficiary under a Credit that are repaid by the Credit Applicant and/or Ukraine to the Financial Institution or the Agent within the Credit Reimbursement Period (as defined below) would be reinstated as described below. |
| **Credit Beneficiaries:** | A natural gas supplier to NAK shall be a Credit Beneficiary, provided: (i) in the opinion of the Credit Applicant and IBRD, it meets counterparty, legal, license, creditworthiness, experience and other criteria determined by the Credit Applicant and IBRD; (ii) in IBRD's opinion, it satisfies IBRD's applicable policies regarding social and environmental standards, integrity and sanctionable practices (as determined from time to time by IBRD); (iii) sales of natural gas to NAK are done on the basis of Eligible Gas Supply Agreements (as defined below); and (iv) the supplier signs and delivers to IBRD a letter of representations (Letter of Representations) addressed to IBRD (a) providing certain warranties and representations, and covenanted undertakings, including regarding compliance with applicable laws and World Bank anti-corruption policies and procedures, including those relating to sanctionable practices, and (b) accepting other relevant Guarantee-related documentation, including the agreed form of L/C and related claims form.<br><br>IBRD may suspend or terminate the Guarantee coverage to a particular Credit Beneficiary if it breaches the warranties, representations or undertakings under the Letter of Representations. |
| **Financial Institution(s); Agent** | One or more Financial Institutions and/or an agent, acceptable to IBRD and the Credit Applicant. |
| **Credits:** | Revolving standby irrevocable letters of credit issued in favor of a Credit Beneficiary by the Financial Institution or the Agent at the request of the Credit Applicant to backstop payment obligations under relevant Eligible GSAs following the occurrence of a Guaranteed Event (as defined below), and Loans made directly into the account of a Credit Beneficiary at the direction of the Credit Applicant in payment of sums invoiced under an Eligible GSA. |

| | |
|---|---|
| | Each L/C will be issued in a pre-agreed form satisfactory to the Credit Beneficiaries, the Credit Applicant and IBRD.<br><br>The Financial Institution or Agent will include pre-agreed forms/documentation requirements as a condition for: (i) making a claim under a L/C, following the occurrence of a Guaranteed Event, and (ii) making a withdrawal request for a Loan, following or contemporaneously with the issuance of an invoice under an Eligible GSA, that will need to be delivered by each Credit Beneficiary and/or the Credit Applicant to the Financial Institution or the Agent, as the case may be. |
| **Maximum Credit Facility Amount:** | The Euro equivalent of US$500 million. |
| **Credit Amount:** | The amount of each Credit is to be determined based on the relevant Eligible GSA and is expected to represent the sum of a certain number of days of gas deliveries and associated net break and transport charges under each Eligible GSA. |
| **Credit Fees:** | To be payable by the Credit Applicant to the Financial Institution or Agent, as applicable. |
| **Validity Period of Credit Facility:** | Four (4) years from the effective date of the Credit Facility. |
| **Drawdown Availability Period of Credit Facility:** | L/Cs may be issued and Loans may be disbursed up to two (2) years from the effective date of the Credit Facility. |
| **Validity Period of each L/C; Repayment Period of each Loan:** | Validity period of each L/C to be agreed depending on the duration of each relevant Eligible GSA, subject to no L/C being for a period greater than the difference between two (2) years and the elapsed time since the effective date of the Credit Facility. Each Loan shall be repaid twelve (12) months from the date of disbursement (as further provided below under 'Credit Reimbursement'). |
| **CREDIT AGREEMENT (CA)** | |
| **Borrower:** | NAK |

| | |
|---|---|
| **Lender(s):** | The Financial Institution or the Agent, as the case may be |
| **Guarantor:** | IBRD |
| **Credit Reimbursement Period:** | Amounts drawn under a L/C or disbursed as a Loan will constitute a loan to NAK from the Financial Institution or the Agent, as applicable (each, a Credit), and will be repayable by NAK twelve (12) months from the date of each drawing or of each disbursement, as the case may be. |
| **Credit Reimbursement:** | Following a drawing under a L/C by a Credit Beneficiary, or following a disbursement of the proceeds of a Loan to a Credit Beneficiary, the Credit Applicant would be obliged under the Credit Agreement to repay the Financial Institution or the Agent the amount drawn or disbursed under the Credit, together with accrued interest thereon, within the Credit Reimbursement Period in accordance with the Credit Reimbursement Schedule pursuant to a Credit Agreement to be concluded among the Credit Applicant, and the Financial Institution and/or the Agent, if applicable.<br><br>For as long as an amount has been drawn or disbursed under a Credit and the related loan has not been repaid, the amount drawn or disbursed shall be deducted from the Maximum Credit Facility Amount.<br><br>If a drawn or disbursed amount plus accrued interest is repaid within the Credit Reimbursement Period, the Credit (and the Maximum Credit Facility Amount) will be reinstated by the amount of the repayment. Alternatively, in the case of a L/C, instead of using the repaid amount to reinstate the original L/C, the amount repaid may be used to fund a different L/C or a Loan; Loans repaid within the Credit Reimbursement Period will revolve and may also be used to issue new L/Cs.<br><br>The Financial Institution or the Agent, as the case may be, will be required to apply amounts repaid to satisfy loans in the order in which the loans were made.<br><br>If a drawn or disbursed amount plus accrued interest is not repaid by the Credit Applicant within the Credit |

| | |
|---|---|
| | Reimbursement Period, then the Financial Institution or the Agent, as applicable, would have the right to call on the Guarantee for the principal amount plus accrued interest due from the Credit Applicant on the date that is twelve (12) months following the day immediately after the last day of the Credit Reimbursement Period.<br>The Maximum Credit Facility Amount shall be reduced permanently on the day immediately after the last day of the Credit Reimbursement Period by the amount that has been drawn or disbursed and unpaid.<br>Any amount paid by IBRD to the Financial Institution or the Agent under the Guarantee would be deducted from the Maximum IBRD Guaranteed Principal (as defined below), which would not be reinstated, even if the Credit Applicant's payment default is remedied following a payment under the Guarantee. |
| **Credit Reimbursement Schedule:** | With respect to each Credit, the Credit Applicant shall repay each drawn or disbursed amount plus accrued interest within the Credit Reimbursement Period. |
| **Interest Rate:** | The Credit Applicant shall pay to the Financial Institution or the Agent, as applicable, an appropriate spread above EURIBOR (proposed by the Financial Institution or the Agent and agreed with the Credit Applicant and IBRD) on the drawn or disbursed amounts under each Credit.<br><br>For the avoidance of doubt, IBRD will not cover penalty interest, default interest or charges of similar nature under its Guarantee. IBRD will however cover accrued interest. |
| **GAS SUPPLY AGREEMENTS** | |
| **Gas Supply Agreements (GSAs)** | The Credit Facility will be in support of GSAs awarded by NAK during the Drawdown Availability Period of the Credit Facility and that shall: (i) have received the prior written approval of IBRD, and which shall either be substantially on the same terms and conditions as the template gas sales agreement of the European Federation of Energy Traders (EFET), or on such other terms and conditions as may be prior approved in writing by IBRD; (ii) be entered into with Credit Beneficiaries; and (iii) have such other terms and conditions as may be agreed between IBRD and NAK |

| | |
|---|---|
| | (each an Eligible Gas Supply Agreement, or Eligible GSA).<br><br>The procurement of Eligible GSAs shall be conducted in compliance with procurement rules and policies acceptable to IBRD and NAK.<br>IBRD may suspend or terminate the Guarantee coverage to a particular Credit Beneficiary if it breaches the warranties, representations or undertakings under the Letter of Representations. |
| **IBRD GUARANTEE** | |
| **Purpose:** | The IBRD Guarantee would backstop the failure by the Credit Applicant to repay the Financial Institution or the Agent for: (a) the amounts drawn by a Credit Beneficiary under a L/C on account of payments due to the Credit Beneficiary from the Credit Applicant under an Eligible GSA following the occurrence of a Guaranteed Event (as defined below), and (b) Loans made directly into the account of a Credit Beneficiary at the direction of the Credit Applicant in payment of sums invoiced under an Eligible GSA. |
| **Guaranteed Events:** | The Credit Applicant's failure to: (a) meet a payment obligation to a Credit Beneficiary under an Eligible GSA (and as recorded in an invoice) by the date on which that payment is due; and (b) to repay within the Credit Reimbursement Period a Loan made directly into the account of a Credit Beneficiary at the direction of the Credit Applicant in payment of sums invoiced under an Eligible GSA. |
| **Maximum IBRD Guaranteed Principal:** | The Euro equivalent of US$ 500 million, as determined by the US$/EUR spot exchange rate prevailing on or about the date when the legal agreements for the guaranteed facility are signed.<br><br>Any amount paid by IBRD to the Financial Institution or the Agent under the IBRD Guarantee would be deducted from the Maximum IBRD Guaranteed Principal and those amounts would not be reinstated. |
| **Maximum IBRD Guaranteed Amount:** | The amount(s) drawn or disbursed (and not repaid) under the Credit(s) shall not exceed the Maximum IBRD Guaranteed Principal, plus accrued interest thereon. |

| | |
|---|---|
| **Maximum IBRD Guarantee Period:** | The Credit Facility Validity Period plus 2 months. |
| **IBRD Guarantee Fees (recurring):** | 50 bps per annum on the Maximum IBRD Guaranteed Principal, payable six monthly in advance by the Credit Applicant. |
| **IBRD Standby Fee**[21] | 25 bps per annum on the Maximum IBRD Guaranteed Principal, payable by the Credit Applicant. |
| **IBRD Front-end Fees:** | Standard Front-End Fee, Initiation Fee and Processing Fee chargeable in respect of the Maximum IBRD Guaranteed Principal shall apply.<br><br>All IBRD related fees to be payable by the Credit Applicant. |
| **IBRD Legal Fees:** | Any outstanding legal fees incurred by IBRD not previously reimbursed by the Credit Applicant shall be payable by the Credit Applicant (or Ukraine) as a condition for effectiveness of the Guarantee. |
| **Conditions Precedent to the effectiveness of the IBRD Guarantee:** | Specific conditions precedent will include, *inter alia*, the following:<br><br>(a) Execution, delivery and effectiveness of the first Eligible GSA in form and substance satisfactory to IBRD.<br>(b) All relevant host country environmental approvals required for the operation and compliance with all applicable requirements relating to World Bank environmental and social standards and sanctionable practices[22].<br>(c) Provision of relevant satisfactory legal opinions, including from: (i) the Minister of Justice of Ukraine relating to the Indemnity Agreement; (ii) the chief legal officer of the Credit Applicant relating to the Eligible GSAs, the Credit Agreement and the Cooperation Agreement; and (iii) counsel to the Credit Beneficiaries relating to the Letter of Representations and the relevant GSA. |

[21] Equivalent to the commitment charge on IBRD loans, i.e., accrues 60 days after date of signature of the Guarantee Agreement.
[22] "Sanctionable practices" include corrupt, fraudulent, collusive, coercive, or obstructive practices.

| | |
|---|---|
| | (d) Payment in full of the Standby, Front-End, Initiation and Processing Fees, and the first semi-annual installment of the Guarantee Fee.<br>(e) Conclusion on terms and conditions acceptable to IBRD of a Guarantee Agreement between the Financial Institution or the Agent, as the case may be, and IBRD; a Credit Agreement between the Financial Institution or the Agent, as applicable, and the Credit Applicant; a Letter of Representations from each Credit Beneficiary to IBRD; a Cooperation Agreement between IBRD and the Credit Applicant; and an Indemnity Agreement between IBRD and Ukraine. |
| **NON COVERAGE/REMEDIES UNDER GUARANTEE** | |
| **Exclusions:** | IBRD shall have no obligation to make any payment of any amount under the Guarantee where an amount drawn under a Credit is made other than in accordance with the terms of the Guarantee. |
| **Limitation of Additional Coverage:** | Following the occurrence of any standard limitation event to be included[23], IBRD may by written notice inform the Financial Institution or the Agent, as applicable, that, unless and until IBRD issues a revocation notice, no further draws under the Credit taking place after three (3) days from the notice will be covered by the Guarantee Agreement[24].<br><br>In addition, IBRD may suspend the Guarantee coverage to a particular Credit Beneficiary if it breaches the warranties, representations or undertakings under the Letter of Representations. |
| **Termination by IBRD:** | IBRD may terminate the Guarantee Agreement effectively immediately and without any further payment obligation if:<br><br>(a) a Financial Institution or the Agent has intentionally made an incorrect statement in, or |

[23] Typical limitation events include: (a) Any changes are made without IBRD's consent to those provisions of the project documents (including any financing agreement) in respect of which IBRD consent is required; (b) Material breach by NAK or Ukraine in respect of their obligations under the Credit facility; (c) An event of default has occurred under the EBRD Facility; (d) A Sanctionable Practice (coercion, collusion or corrupt, fraudulent or obstructive practices) is found to have occurred in relation to the Project; (e) Suspension or lapse of Ukraine from membership in the International Bank for Reconstruction and Development or the International Monetary Fund.

[24] Under these circumstances, the Financial Institution will have the right to follow the same approach of suspending Beneficiaries' rights to make draws under Credits under the LC Facility.

| | |
|---|---|
| | has omitted material information or evidence from, a Demand with the intention of providing IBRD with false or misleading information; or<br>(b) there is substantial evidence that a Financial Institution or the Agent has engaged (or is engaging) in any Sanctionable Practice in connection with the Project; or<br>(c) a Financial Institution or the Agent transfers, assigns or encumbers, without IBRD's prior written consent, any of its rights under the Guarantee Agreement; or<br>(d) a Financial Institution or the Agent shall not have obtained IBRD's prior written consent to any proposed change, variation, modification or amendment to, or waiver under, the Credit or the Credit Agreement as required under the Guarantee Agreement;<br>(e) a Financial Institution or the Agent breaches any other material obligation under the Guarantee Agreement and has not remedied such breach within the applicable cure period; or<br>(f) Other termination events in connection with events attributable to the relevant Credit Beneficiary, including if it breaches the warranties, representations or undertakings under the Letter of Representations. |
| **GUARANTEE RELATED AGREEMENTS** | |
| **Guarantee Agreement:** | The terms and conditions of the IBRD Guarantee would be embodied in a Guarantee Agreement between the Financial Institution, or the Agent, as the case may be, and IBRD. |
| **Letter of Representations:** | Each Credit Beneficiary would provide a letter of representations to IBRD in respect of IBRD's Guarantee pursuant to which the Credit Beneficiary will make warranties and representations, and covenanted undertakings, including in respect of compliance with applicable laws and World Bank anti-corruption policies and procedures, including those relating to sanctionable practices.<br><br>IBRD may suspend or terminate the Guarantee coverage to a particular Credit Beneficiary if it breaches the warranties, representations or |

| | |
|---|---|
| | undertakings under the Letter of Representations. |
| **Indemnity Agreement:** | Ukraine would enter into an Indemnity Agreement with IBRD. Under the Agreement, Ukraine would, *inter alia*, undertake to indemnify IBRD on demand, or as IBRD may otherwise determine, for any payment made by IBRD under the terms of the Guarantee.<br><br>If Ukraine breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of Ukraine to make withdrawals under any other loan with IBRD or credit agreement with IDA, or any IBRD loan to a third party guaranteed by Ukraine, and may declare the outstanding principal and interest of any such loan or credit to be due and payable immediately. A breach by Ukraine under the Indemnity Agreement will not, however, forgive any guarantee obligations of IBRD under the IBRD Guarantee.<br><br>The Indemnity Agreement will follow the usual legal regime, and include dispute settlement provisions, which are customary in agreements between member countries and IBRD, as well as a negative covenant regarding certain actions by and restructurings of NAK without IBRD's prior written consent (NAK Covenant) on terms and conditions materially similar to those agreed under the EBRD-NAK Facility Agreement, and an undertaking to pay any outstanding legal fees and expenses incurred by IBRD not previously reimbursed by the Credit Applicant. |
| **Credit Agreement:** | Credit Applicant will enter into a Credit Agreement with the Financial Institution or the Agent, as applicable, in which it will undertake to repay the Financial Institution or the Agent for the amounts drawn or disbursed under a Credit within the Credit Reimbursement Period. |
| **Cooperation Agreement:** | Credit Applicant would enter into a Cooperation Agreement with IBRD, under which Credit Applicant would covenant, *inter alia,* that it will: (i) comply with all its obligations under the transaction documents, including its obligation to comply with the NAK Covenant and pay any outstanding legal fees and expenses incurred by IBRD; (ii) obtain IBRD's consent |

| | |
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| | prior to agreeing to any change to any transaction document which would materially affect IBRD or prior to agreeing to its restructuring; (iii) provide certain notices to IBRD; (iv) cooperate with IBRD and furnish all such information related to such matters as IBRD shall reasonably request; (v) promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters; and (vi) comply with certain account management obligations. |

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UKRAINE
SELECTED CITIES AND TOWNS
OBLAST CAPITALS
AUTONOMOUS REPUBLIC CAPITAL
MUNICIPALITIES
(CITIES WITH SPECIAL STATUS)
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
OBLAST BOUNDARIES
AUTONOMOUS REPUBLIC BOUNDARIES
INTERNATIONAL BOUNDARIES
MAY 2009
IBRD 33505R
BELARUS
RUSSIAN FEDERATION
POLAND
SLOVAK REPUBLIC
HUNGARY
ROMANIA
MOLDOVA
BULGARIA
UKRAINE
KYIV
(KIEV)
VOLYN
RIVNE
ZHYTOMYR
CHERNIHIV
SUMY
LVIV
TERNOPIL
KHMELNYTSKYI
KYIV
POLTAVA
KHARKIV
LUHANSK
IVANO-FRANKIVSK
ZAKARPAT
CHERNIVTSI
VINNYTSYA
CHERKASY
KIROVOHRAD
DNIPROPETROVSK
DONETSK
MYKOLAÏV
ODESSA
ZAPORIZHZHIA
KHERSON
CRIMEA
Kovel
Sarny
Chernihiv
Sumy
Luts'k
Rivne
Korosten
Zhytomyr
L'viv
Ternopil'
Khmel'nyts'kyi
Vinnytsya
Ivano-Frankivs'k
Uzhhorod
Chernivtsi
Hora Hoverla
(2061 m)
Uman'
Cherkasy
Kremenchuk
Poltava
Kharkiv
Sieverodonetsk
Luhans'k
Kirovohrad
Dnipropetrovs'k
Donets'k
Kryvyi-Rih
Nykopol
Zaporizhzhia
Mykolayiv
Melitopol
Mariupol
Berdiansk
Kherson
Odessa
Izmail
Vilkova
Kerch
Yevpatoriia
Teodosiia
Simferopol'
Sevastopol
Yalta
Carpathian Mtn.
Dnieper Upland
Dnieper Lowland
Donets Basin
Kyiv Reservoir
Kremenchug Reservoir
Kakhov Reservoir
Desna
Dnieper
Dniester
South Buh
North Buh
Inhulets
Donets
Mouths of the Danube
Black Sea
Sea of Azov
To Warsaw
To Minsk
To Zhlobin
To Bryansk
To Orel
To Voronezh
To Tarnow
To Satu Mare
To Tirgu Mures
To Birlad
To Tecuci
To Buzau
To Medgidia
To Armavir
To Sochi
25°E
30°E
35°E
50°N
45°N
0
50
100
150 Kilometers
150 Miles