

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA516

Project Name	Energy Efficiency Project (P130013)
Region	EUROPE AND CENTRAL ASIA
Country	Kazakhstan
Sector(s)	Energy efficiency in Heat and Power (100%)
Lending Instrument	Specific Investment Loan
Project ID	P130013
Borrower(s)	Republic of Kazakhstan
Implementing Agency	Ministry of Industry and New Technologies
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	08-Jan-2013
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Estimated Date of Board Approval	15-Apr-2013
Decision	

I. Project Context

Country Context

The Republic of Kazakhstan is the largest economy in Central Asia. Two decades ago, emerging from the break-up of the Soviet Union, the Kazakh economy was half of its size today. Isolated from the world economy, it faced the immense challenge of economic transformation. Over the past decade, the country has made impressive policy strides, absorbed large natural resource-based earnings responsibly, progressed towards developing a rules-driven fiscal framework, strengthened public management and the business climate, and allocated resources for improved social services and critical infrastructure to sustain growth. Gross Domestic Product (GDP) per capita rose, in terms of constant 2011 dollars, from US\$5,255 in 2000 to US\$11,245 in 2011 and poverty incidence fell from 46 percent to below 6 percent over the same period.

Tightening liquidity in international financial markets in 2007 hit Kazakhstan's financial sector. The second shock arose from the global financial crisis in 2008 and the associated sharp decline in commodity prices in 2009, which led to an economic slowdown. The authorities have taken a number of steps and supported output with stimulus programs directed at infrastructure and construction. The decisive approach to macroeconomic and financial sector management contributed to a quick recovery in output. Kazakhstan's economy grew by 1.2 percent in 2009, 7.3 percent in 2010 and by 7.5 percent in 2011.

However, the economy remains highly natural resource-dependent, with minerals, oil and natural gas accounting for 73 percent of exports and 39 percent of GDP. Therefore, diversification of the economy and improved competitiveness are key development priorities. Development strategy of the Government of Kazakhstan (GOK) focuses on modernization, improved competitiveness and a shift towards growth based on non-oil sources. Increasing emphasis is also being put on strengthening governance, business-enabling environment and private sector enterprise. Following the Parliamentary elections of January 2012, the President of the country outlined the key government priorities within this overall strategy, including the renewed emphasis placed on regional development, diversification and improving energy efficiency of the national economy.

II. Sectoral and Institutional Context

Kazakhstan has abundant mineral and fuel resources and, with its proven oil, coal and uranium reserves, it ranks among the most energy-abundant countries in the world. Oil and natural gas output amounts to nearly a quarter of GDP and accounts for over two-thirds of exports.

In the electricity sector, the installed capacity is 19,400 MW, of which only 15,200 MW is available for generation. In 2011, coal-fired plants accounted for 84 percent of total generation, with hydro-power plants (10 percent) and gas-fired plants (6 percent) providing the balance. Total heat production is 390,963 TJ with 100 percent produced from coal and peat. Industry is the largest consumer of electricity (about 75 percent), followed by households (11 percent) and transportation (2 percent). Kazakhstan's rapid economic growth in the past decade has led to a sharp upswing in energy and electricity consumption. As a result, the earlier large surplus of electricity generation is gradually disappearing and the supply-demand situation has become tight, causing occasional spot shortages during winter peak loads, especially in the booming southern part of the country. The International Energy Agency (IEA) projects Kazakhstan's energy demand to increase at least 50 percent by 2035.

High Energy Intensity of the Economy. Energy is used very inefficiently in Kazakhstan, reflecting the legacy of the Soviet era. The economy is highly energy-intensive and is dominated by extractive industries and low level commodity processing. Moreover, dated and inefficient infrastructure, low energy prices mirroring the country's rich fossil fuel endowments and distorted pricing, and the lack of targeted energy efficiency (EE) policies and enabling institutional framework contribute to inefficient use of energy.

Kazakhstan ranks among the top ten of the most energy-intensive economies in the world. It uses three times as much energy per unit of GDP (purchasing power parity-based) compared to the Organization for Economic Cooperation and Development (OECD) average. Despite its already elevated level, the energy intensity of Kazakhstan has kept growing in recent years. Mirroring the high energy intensity, the country is the fourth most carbon-intensive country in the world. With 1.4 kg CO₂ per dollar of GDP emitted in 2008, Kazakhstan is more than twice as carbon intensive as the Europe and Central Asia (ECA) region on average and more than three times compared to the OECD average.

Adverse Impacts of High Energy Intensity. The high energy intensity incurs significant costs to the country in terms of economic competitiveness, public health and environment. International comparisons show that the industrial sector in Kazakhstan is significantly more energy intensive than in most countries. For example, electricity consumption per unit of industrial output is about 2.5 times higher than in Germany. This negatively affects the competitive position of Kazakh semi-

manufactured goods on international markets, especially in the energy-intensive metal product categories. Inefficient use of electricity contributes to power shortages, especially amid tightening supply-demand balance, and adversely impacts regional economic development and social welfare. Energy-related pollution is one of the reasons for the existence of a number of environmental “hot spots” in the country with localized pollutants (e.g., NO_x, SO_x and particulate emissions) posing significant health risks.

Policy Context of Energy Efficiency. Historically, EE was not a high priority of the GOK. A “Law on Energy Saving” was adopted in 1997. However, it remained mainly declarative in nature due to the lack of specific national goals on EE improvements and implementable action plans. Recently, the GOK has devoted increasing attention to EE as a policy priority to prevent serious growth-slowng energy shortages, improve industrial competitiveness and environmental performance, and mitigate the social consequences of the recently rapid rise in domestic energy prices. In March 2010, the President of Kazakhstan set the goal to reduce energy intensity of the national economy by 10 percent by 2015 and 25 percent by 2020, making EE a top policy priority.

In January 2012, a new Energy Efficiency Law went into effect, which provides significantly more effective legal, regulatory and institutional framework for EE than the previous law. Among other things, the Law calls for mandatory energy audits of all business entities consuming 1,500 tons of oil equivalent (toe) or more per year. Public enterprises are mandated to prepare EE plans to ensure specified annual reductions in energy consumption. The Law provides for the allocation (of unspecified amounts) of state budget resources for the implementation of EE plans, audits, regional EE centers, training, etc.

For implementation support of the new Law, the GOK approved a Comprehensive Program for Energy Efficiency (CPEE), which is a time-bound action plan, containing 47 specific policies to be developed and measures with responsibilities assigned to various GOK agencies for implementation coordination and monitoring. The CPEE focuses on the most energy inefficient sectors of the economy, including industry and the municipal/residential sector. The aim is to tap the country’s vast energy saving potential, which is estimated at US\$1.4 billion per year or 16 TWh of electricity (about 20 percent of total electricity consumption), 11 million Gcal of heat and 7 million tons of coal. Mechanisms in the CPEE include fiscal incentives, standards and codes, awareness raising, state budget allocations with private sector leverage, and the creation of a National Energy Savings Fund.

Energy Savings Potential of Public and Residential Sectors. Under the CPEE, a sector-specific EE plan is to be drawn up for housing and social facilities. According to GOK estimates, the energy saving potential of public and residential sector is about 3.7 mtoe per year. The importance of these two sectors is underscored by the fact that they account for 55 percent of the country’s heat consumption and 20 percent of electricity consumption. The public sector uses about 2,300 GWh/year of electricity and about 59,000 TJ of heat (15 percent of heat consumption). About 70 percent of the public and residential buildings would require retrofitting in order to comply with applicable thermal efficiency standards of Kazakhstan. International experience shows that public office buildings in developing countries can readily achieve 20 to 40 percent energy savings through cost-effective retrofits. Among other things, the CPEE calls for mandatory energy audit of all public buildings and the application of EE performance criteria for major building renovations.

Institutional Framework for Energy Efficiency. The institutional structure related to EE was

reorganized in 2010. The newly established Ministry of Industry and New Technologies (MINT) became responsible for energy policy setting, including EE and renewable energy. Before this reorganization, EE belonged to the Ministry of Energy and Mineral Resources, which in 2010 was converted into Ministry of Oil and Gas. In addition to MINT a number of other state institutions, such as Agency of Construction and Communal Services and JSC Samruk-Energy, are involved in implementing EE initiatives. Furthermore, a separate dedicated EE agency, KazakhEnergyExpertise (KazEE), was established under MINT to implement EE initiatives, provide engineering and consultancy service and support MINT in developing the relevant EE primary and secondary legislation.

Specific Barriers to Energy Efficiency Investments. The abundance of opportunities for profitable EE investments is in sharp contrast with the limited number of successful EE projects and the low volume of actual investments, particularly in the public sector. Reasons for this disparity are informational, technical, financial, institutional and policy/procedural barriers constraining the promotion and market penetration of EE. These include:

(a) **Energy pricing.** Energy tariffs determine the financial viability of EE investments. Despite substantial recent increases, the GOK-regulated retail electricity and heat tariffs are still considered significantly below the full economic cost-recovery levels. Furthermore, in most of cases, the heat services are billed based on regulated norms rather than on consumption, which does not encourage energy savings by end-users. This is a major factor in reducing the financial viability of EE projects.

(b) **Financial barriers.** The shortage of readily available and affordable debt or state budget financing is a key barrier to the uptake of EE projects in public facilities. Commercial banks are generally not familiar with financial and technical issues involved in EE projects and perceive the risks to lending to municipal and other public entities, as well as transaction costs of such projects, to be high. The excessively risk-averse bank behavior, high collateral requirements and lack of viable delivery mechanisms have also constrained EE financing. As with many post-Soviet states, a culture of municipal financing and credit is lacking, with many public entities reliant on state budget transfers to cover most if not all of their expenses and face borrowing restrictions. On the other hand, the state budget EE funding for municipal and public entities is potentially available but requires institutional and financing frameworks to be developed.

(c) **Lack of information, weak technical capacities and high perceived risks.** The lack of technical skills, information and awareness hampers the demand for EE products and services. Frequently, potential project sponsors lack the capacity to develop high quality bankable EE investment proposals, or are skeptical of the actual energy cost savings. Therefore, end users, particularly those in the public sector, are reluctant to undertake investments if they cannot be sure the operational savings will pay for the underlying investments. The EE market is currently underdeveloped due to weak technical capacity and lacking demand for EE services and goods. For instance, there are a number of energy audit companies, both local and subsidiaries of international companies, but almost no ESCO operating in the market.

(d) **Institutional and regulatory barriers.** Despite GOK's recent considerable policy efforts, the institutional and regulatory framework for EE remains largely fragmented and most measures have yet to be fully implemented. While the main EE law was adopted, secondary legislation and regulations still need to be developed and enforced, including budgeting, procurement, certification schemes, audit and benchmarking. Further the public sector suffers from a range of procedural barriers, from budgeting to procurement, which tend to be rigid in nature and prevent many EE improvements from being made.

III. Project Development Objectives

The Development Objectives of the proposed project are to improve: (a) energy efficiency in public and social facilities; and (b) the enabling environment for sustainable energy financing.

IV. Project Description

Component Name

Energy efficiency investments in public and social facilities
Technical assistance

V. Financing (in USD Million)

For Loans/Credits/Others	Amount
Borrower	1.30
Free-standing TF for ECA	21.70
Total	23.00

VI. Implementation

On behalf of the GOK, MINT will be responsible for the overall project coordination and oversight. MINT will need to (i) approve the overall project framework, Operations Manual (OM), subproject criteria; and (ii) ensure intra-GOK coordination and communication. An inter-agency coordination working group will be established to ensure coordination within GOK and would include representatives of the Ministries of Finance, Economic Development and Trade, and others. Day-to-day project implementation will be delegated to the PIU to be established within KazEE, a specialized EE entity under MINT. These roles and responsibilities will be reflected in a Subsidiary Agreement between MINT and KazEE as well as in the OM.

The PIU will have primary responsibility for project implementation, including subproject selection, signing MOUs with oblasts, consultant/contractor procurement, technical supervision, financial management, monitoring and reporting. The PIU will prepare Terms of Reference (TOR) for the TA activities, prepare and evaluate tenders and sign construction works contracts under Component 1. The PIU will process all payments and manage a Designated Account under the Project. The PIU will be staffed with experienced personnel to mitigate the risk in insufficient capacity.

VII. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12		x
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

VIII. Contact point

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