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(Kazakh Research Institute of Power Engineering)

Energy Efficiency of the Oil and Gas Sector of the Republic of Kazakhstan

Mr Kalyk Abdullayev
Chairman
Kazakhstan Research Institute for Power Engineering

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Production and Consumption of crude oil and refined products in the Republic of Kazakhstan in 2008, thousand tons

	Balance as of 01.01.08	Production	Import	Export	Consumption	Balance as of 01.01.09	Production Ratio 2008/2007, %	Consumption Ratio 2008/2007, %
Crude oil	1303,1	70616,8	6660,9	62820,2	12288,7	3471,9	105,0	102,0
Gasoline	105,0	2491,1	1055,7	163,9	3355,4	132,5	94,8	110,2
Diesel fuel	101,0	3898,0	610,1	444,0	4019,5	145,6	101,4	111,5
Fuel oil	131,4	3134,7	145,7	1564,2	1674,1	173,5	121,7	116,3
Aviation kerosine	12,3	399,2	145,8	0	535,2	22,1	154,2	111,5

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Natural Gas Recovery, Commercial (Dry) Gas Production, Consumption and Export of Gas in the Republic of Kazakhstan, bln m3

	2007	2008	2008/2007 Ratio, %
Total natural gas recovery	29,6	33,5	113,2
Natural gas usage by subsurface users	13,6	16,0	117,6
Dry gas production	16,0	17,5	109,4
Distribution, including the following:			
Supplies to internal market	8,7	9,0	103,4
Usage by subsurface users	2,8	2,8	100,0
Export	4,5	5,7	126,7

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Hydrocarbons Extraction Forecast

	2010	2015	2020
Oil Production (mln tons)	80	100	160
Gas Production (bln.m³)	42,6	61,5	80,0

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Gas Turbine Power Plants at Oil and Gas Fields

	Capacity, MWatt	Annual Gas Consumption, mln m3	Commissioning Date
Kandyagash GTPP	100	175	2009
TengizChevrOil GTPP	240	420	2009
CNPC AktobeMunayGaz GTPP	45	80	2009
Agip KCO Onshore GTPP	150	260	2010/2011
Agip KCO Offshore GTPP	120	210	2010/2011
PetroKazakhstan GTPP	55	70	2005
KazGerMunay GTPP	50	50	2007

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TengizChevrOil GTPP

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Kandyagash GTPP

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Dynamics of Gas Flare Volumes Reduction

	2006	2007	2008	2015 (forecast)
Flare Gas, bln m3	3.1	2.9	2.4	0.2

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Karachaganak Gas and Gas Condensate Field

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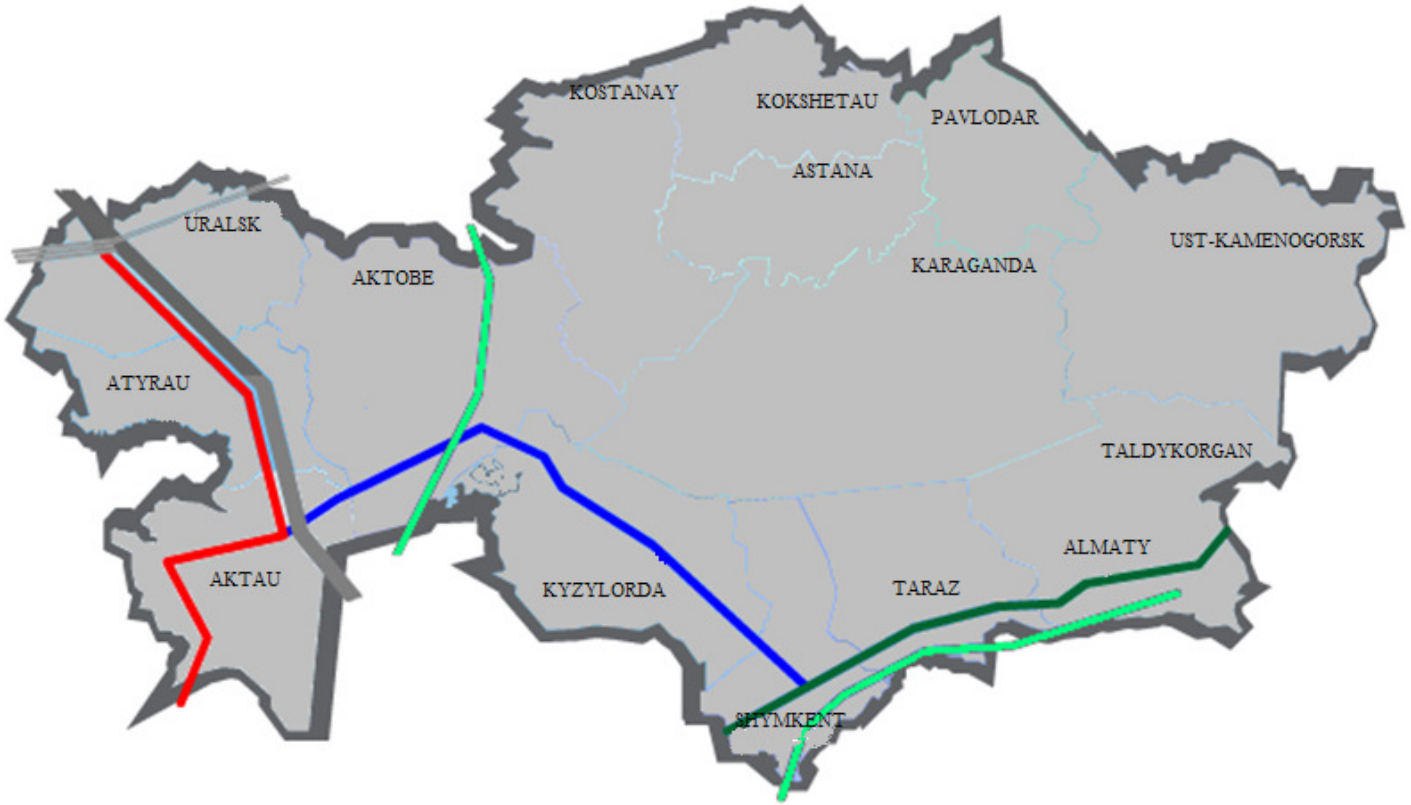
Gas Pipelines of the Republic of Kazakhstan

International transit capacity -115 bln m3/year



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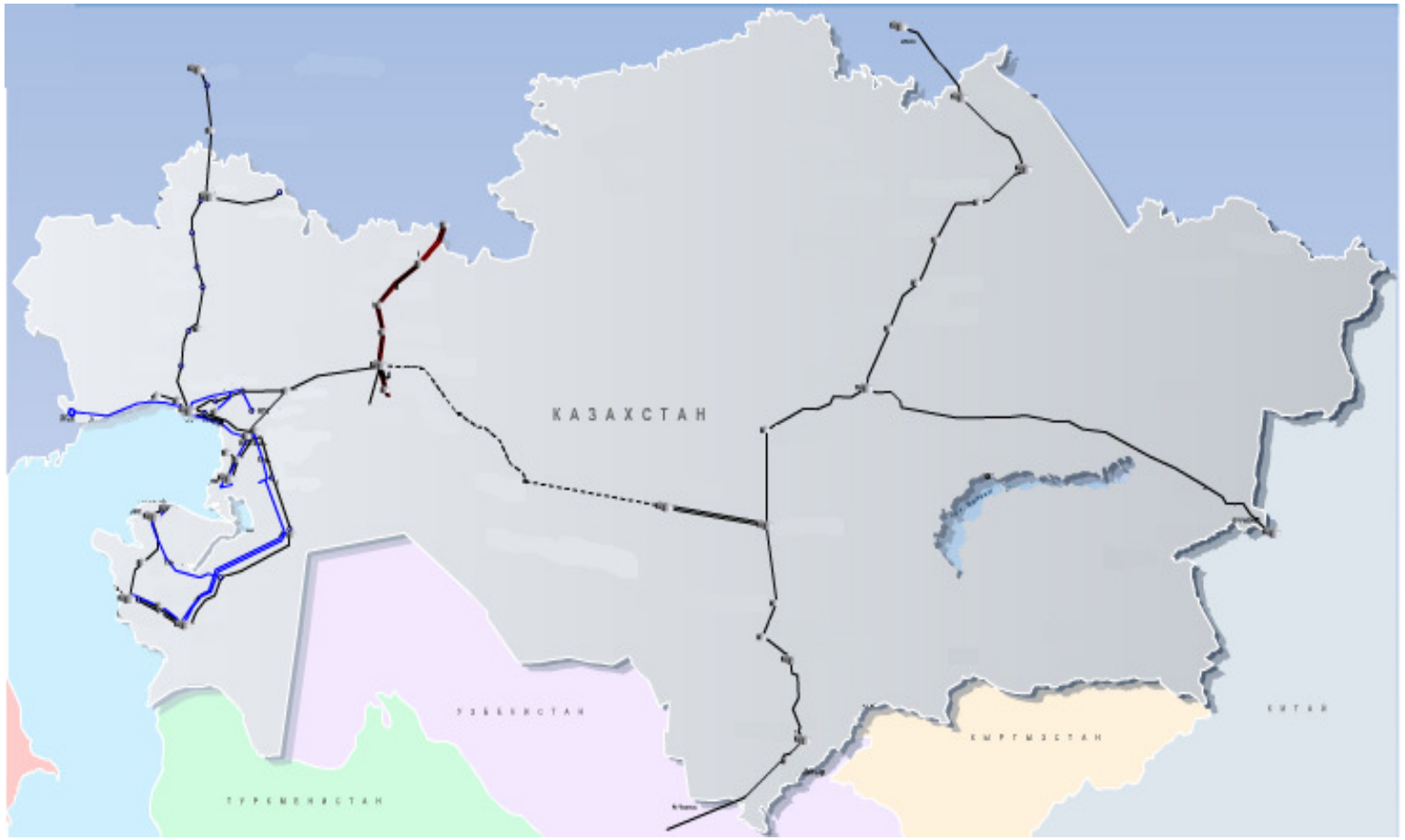
Oil Pipelines of the Republic of Kazakhstan

Capacity – over 60.0 mln tonnes/year



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The implementation of the above measures at the Kalamkas oil pumping station (OPS) has allowed to decrease the electric power consumption from 1,85 kWatt-hour to 0,73 kWatt-hour to pump one ton of oil.

The savings of the electric power reached 4 450 kWatt-hours, or 135 000 USD based on 4 192 thousand tons of the actual annual volume of pumped oil through the Kalamkas-Karazhanbas oil pipeline, which allowed to reach the payback period of two years.