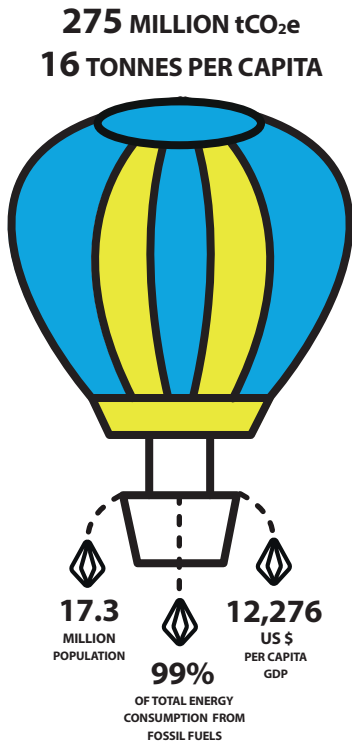


# KAZAKHSTAN

## CLIMATE FACTS AND POLICY

### POLICIES AND PROCESSES



#### Kazakhstan 2050 strategy

Green Economy concept  
Ecological code with climate provisions  
Laws and programmes on energy savings, renewables, emissions trading  
Industrial development, housing modernization and climate mitigation programmes  
Energy labelling, audits and certification, special fixed tariffs for renewable energies

#### 2020 targets

Pledge to keep GHG emissions in 2020 at 15 per cent below 1990 level  
Maintain GHG emissions in power sector at 2012 level  
Increase share of alternative (sun, wind, biogas, small hydro) energies to 3 per cent  
Reduce GDP energy intensity by 25 per cent

#### 2030 targets and INDC

##### Mitigation

Base year: 1990  
Unconditional 2030 target: 15 per cent economy-wide reduction compared to base year  
Conditional 2030 target: 25 per cent economy-wide reduction compared to base year  
Reduce GHG emissions in power sector by 15 per cent compared to the 2012 level  
Increase share of renewable energy to 30 per cent, including alternative energies 10 per cent  
Reduce GDP energy intensity by 30 per cent

##### Adaptation priorities

Water security, water use efficiency  
Food security, agricultural growth

#### 1990-2012 GHG inventory of all sectors & gases

Established GHG inventory process and cadastre  
Evolving MRV and GHG emissions modelling systems  
UNFCCC expert review of GHG inventory  
Biannual emissions reporting to the UNFCCC since 2014

### CLIMATE ACTIONS

#### Total GHG emissions in 2012 at 20 per cent below 1990 level

Growing carbon sequestration by forests and grasslands  
Countrywide gasification and switch to natural gas  
Emissions standards: Euro-4 in 2013, Euro-5 in 2016, Euro-6 in 2020

#### Pioneer in emissions trading since 2013

160+ enterprises in power, oil-gas, manufacturing, 150+ million tonnes of CO<sub>2</sub>  
2014 prices at EUR 1.5 per tonne of CO<sub>2</sub>  
Member of the Partnership for Market Readiness  
National allocation plan for GHG emissions quotas

#### Expo-2017 in Astana: Future Energy

The current installed capacity: wind 61 MW, solar 55.5 MW, small hydro 117 MW, biogas 0.8 MW  
Rapid growth in renewable energy projects  
Local green economy initiatives and projects

### CLIMATE FINANCE

#### US \$100 billion investment in greening the energy sector by 2050

Expecting 10 GW of installed capacity of green energy by 2030, and 33 GW by 2050

#### Climate Investment Funds US \$200 million

Renewables, modernizing district heating, waste management, railways

#### GEF US \$37 million for 8 projects

Wind power market, energy-efficient residential buildings, urban transport

#### NAMAs: Two projects in the pipeline

Astana urban development, solar power

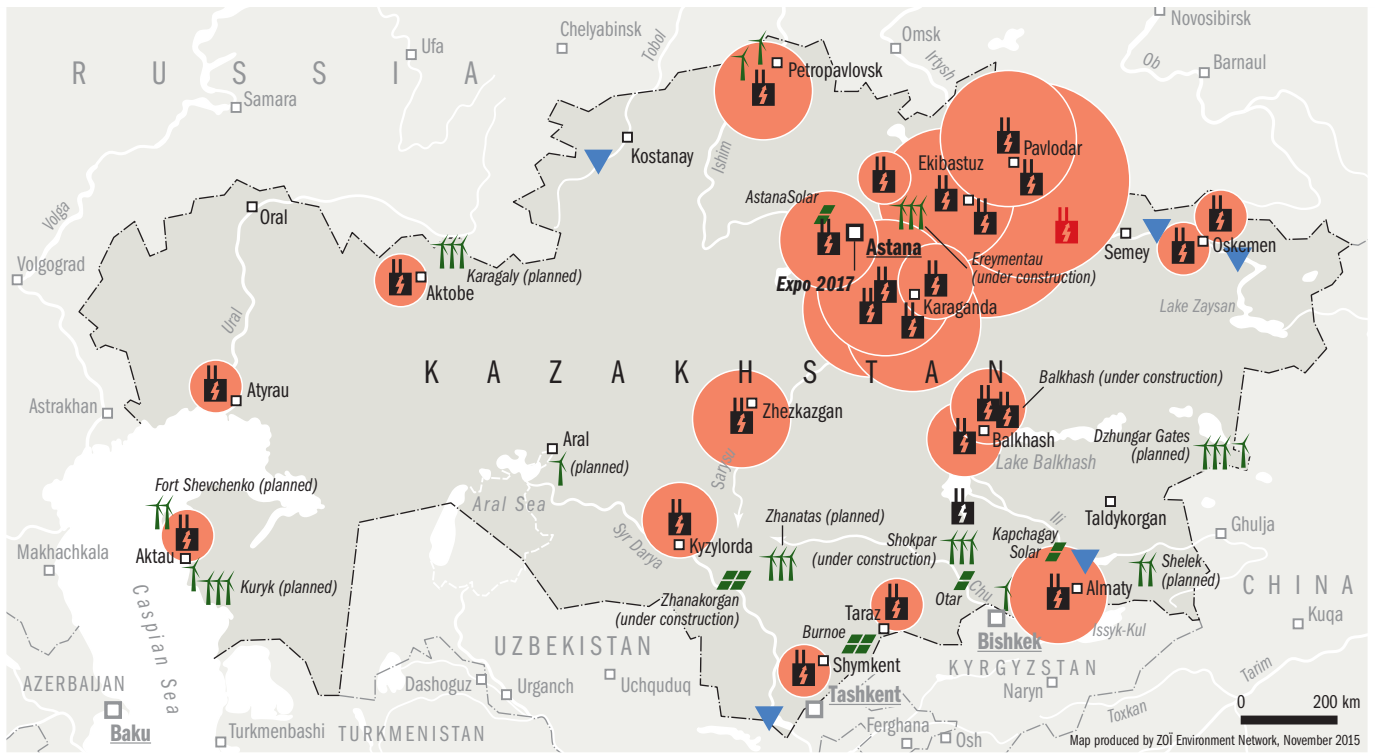
#### EBRD energy reforms and projects

US \$80 million support to Yereymentau wind project  
Renewable energy financing facility  
Sustainable energy financing facility

#### Incentives for renewables and energy savings

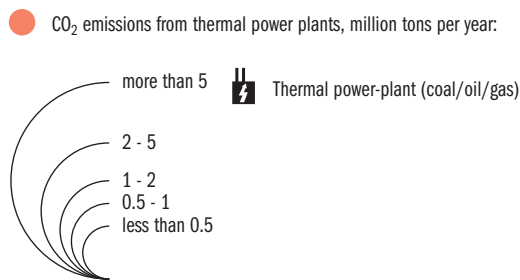
Subsidies for renewable energy  
Tax rebates for energy efficiency

Sources: latest national GHG inventory data (2010-2014) or estimates based on INDCs (2014-2015); population, energy and economic data (2012-2014) from the World Development Indicators of the World Bank <http://data.worldbank.org/indicator>

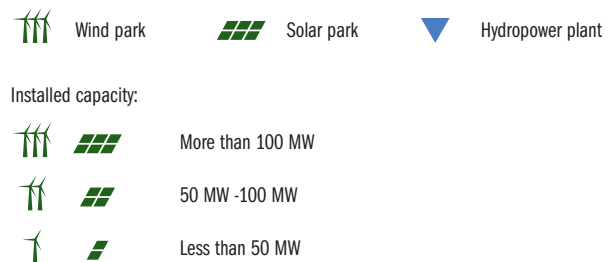


## Energy and emissions

### Fossil fuel energy installations and carbon emissions



### Renewable energy installations and plans



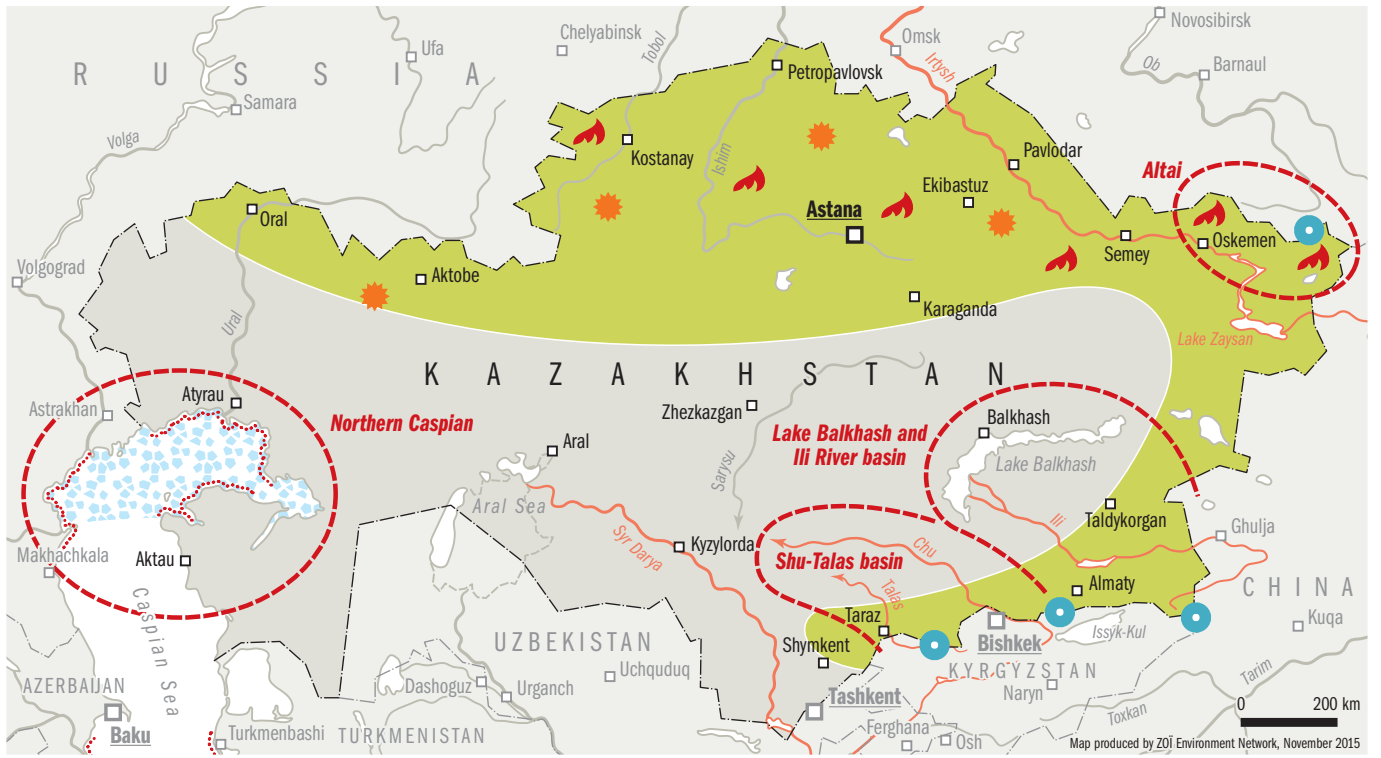
## Policies and institutions

The Kazakhstan 2050 strategy and the Green Economy concept (developed by the former Ministry of Environment and not yet approved at the President's Cabinet level) are guiding Kazakhstan's transition to a green economy. Launched in 2013, these initiatives take a long-term (until the year 2050) strategic approach to promoting best available technologies, introducing new financial mechanisms and incentives, improving environmental performance in all key economic sectors and curbing greenhouse gas emissions. Unique among Central Asian countries, Kazakhstan has an ecological code based on comprehensive environmental and climate change legislation. The country introduced this code in 2010, and has updated it frequently since then to reflect regulations and targets for GHG emissions.








Kazakhstan is the leading producer of uranium in the world, but has no active nuclear power plants. Responding to the global

drops in oil and gas prices and emergent domestic energy deficit, the country is considering adding nuclear power to its energy mix. Reflecting the increased importance of energy as a key economic driver, in 2014 Kazakhstan moved climate-related matters (such as the development of a green economy and the reduction of carbon emissions) from the dissolved Ministry of Environment and Water Resources to the reformed Ministry of Energy. Responsibilities for the water and forestry sectors were assigned to other ministries, including the Ministry of Agriculture. KazAtomProm - the national nuclear company - also contributes to the development of renewable energy.




The Kazakhstan-led Green Bridge partnership, agreed at regional ministerial environmental conferences in 2010 and 2011, is intended to support green economic growth throughout Central Asia through international cooperation, support in technology transfer, exchange of knowledge and climate financing.







## Impacts of climate change

-  Rivers with intense water use and increased stress from climatic and hydrological changes
-  Major food producing and populated areas: risk of extreme weather and crop losses
-  Caspian Sea: risk of flooding due to sea level fluctuation and changes in winter ice cover
-  Densely populated and agriculturally important areas with increased environmental stress and projected impacts of climate change
-  Forest- and bush fires
-  Severe drought impacts
-  Reduction of ice cover and risk of glacial lakes outburst floods

## Kazakhstan scorecard

-  Country's share of global emissions
-  Country's emissions per capita
-  General climate action ambition

### Mitigation commitment:

-  Emissions reduction
-  Decoupling from population growth
-  Decoupling from economic growth
-  Renewable energy prospects

### Adaptation action

### National climate policy actors

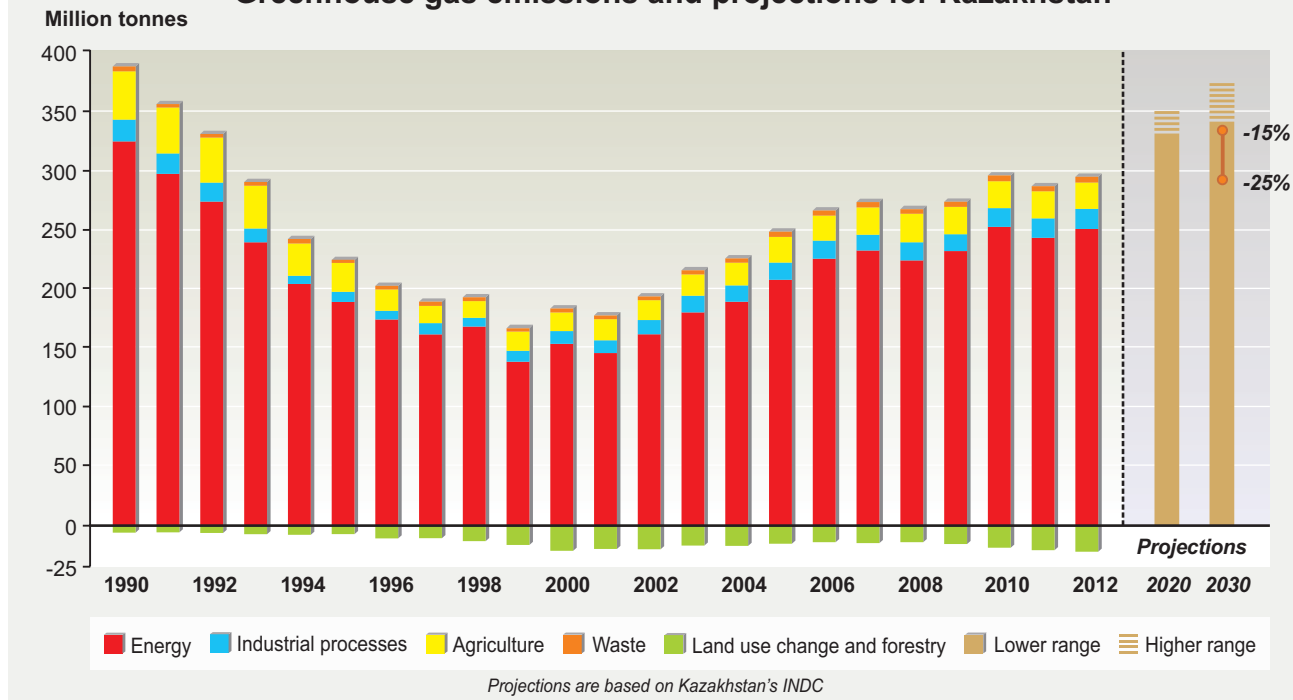
**Policy leadership:** Green Economy Council under the President, Ministry of Energy

UNFCCC focal point: Ministry of Energy

GHG inventory and projections: Jasyll Damu

Climate technology network coordination: Nazarbaev University

## Greenhouse gas emissions and projections for Kazakhstan



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## Climate actions

Kazakhstan is a candidate for Annex 1 membership in the UNFCCC, and since 2009 has held special status as an Annex 1 Party for the purposes of the Kyoto Protocol. The Kazakh GHG inventory leads Central Asia in terms of quality and completeness, and the country's emissions modelling uses advanced tools. In 2014, the country published its first biannual update report as part of its special status reporting obligations.

Kazakhstan's GHG emissions reached their highest level in 1990 at 357 million tonnes of CO<sub>2</sub>-equivalent, and in 2012 were 20 per cent below that level. GHG emissions in the energy sector account for more than 85 per cent of total emissions. Under the Kyoto Protocol the country pledged to limit its emissions to near its 1990 levels. The Kazakhstan 2050 strategy and the Green Economy concept all aim for a countrywide reduction of GHG emissions of 15 per cent by 2020 and 25 per cent by 2050, compared to 1990. The Kazakh INDC reiterates a 15 per cent reduction as an unconditional target, and specifies a conditional target of a 25 per cent reduction using 1990 as the base year.

The country also has specific emissions targets for the power sector by 2020 and 2030, and has goals related to energy efficiency. The current domestic GHG emissions trading system (ETS) and the national action plan on carbon emissions quotas concentrate on the energy sector and industrial installations emitting more than 20 000 tonnes per year. The ETS covers 140 million tonnes of CO<sub>2</sub> from 170 enterprises out of 270 million tonnes of CO<sub>2</sub> emissions in the energy and industry sectors, but does not include municipal or household energy consumption or the agriculture, waste and forestry sectors.

Kazakhstan's path to decarbonization contemplates low-carbon energy that includes both renewables and nuclear sources. A target for their share is set at 50 per cent by 2050. By 2020, the total installed capacity of solar power stations in Kazakhstan may reach 75-100 MW, and for wind power may exceed 1 000 MW, with an additional 500-700 MW of small-scale hydropower and biogas capacities. At the same time the rapid growth in domestic energy consumption and the new thermal power stations under construction make the transition from coal to cleaner energy challenging.

## Climate finance

Kazakhstan is a pioneer in emissions trading in Central Asia. Current average carbon trading price is 450 Kazakh tenge (2 Euros) per tonne.

The EBRD is financing a 50 MW wind power plant in Yereymentau, 100 km east of Astana - one of the first large-scale wind energy projects in Kazakhstan.

The national nuclear industry invests in wind, geothermal and solar applications, and implements these projects with foreign investors such as the integrated production of photovoltaic modules with French Atomic Energy and Alternative Energies Commission CEA.

National authorities are promoting the idea of energy certificates and energy labelling, together with the development of taxation tools to improve energy efficiency. Small-scale remote users of alternative energy sources with installed capacity up to 5 kWh not connected to the central grid may receive a governmental subsidy covering half of the tariff.

## Sources of information for the scorecard

Kazakhstan's publications, strategies and information materials: Kazakhstan 2050 strategy, Green Economy concept, Astana EXPO- 2017 process, Green Bridge Initiative

National climate-related assessments and reports: Biannual emissions report 2014, Third-sixth national communications to UNFCCC 2013, Climate mitigation programme

Publications and materials of the World Bank, EBRD, GEF, UNECE, Environment and Security initiative, International Emissions Trading Association, Renewable Markets

Maps and atlases by Kazakhstan's Ministry of Energy, UNDP, INCOTEC Watch, Carbon Monitoring for Action, Global Risk Data Platform

Zoï expertise, intelligence and interviews with stakeholders in Kazakhstan



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