Towards Secure and Sustainable Energy Supply in Central Asia:

Electricity Market Reform and Investment Protection

Occasional Paper

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Towards Secure and Sustainable Energy Supply in Central Asia: Electricity Market Reform and Investment Protection

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Context of the study

The electricity sector in Central Asia is facing considerable challenges. Supply-demand adequacy is under increasing pressure, in particular in the winter in Tajikistan and Kyrgyzstan. Blackouts and load shedding occur frequently with important social and economic consequences. The system is characterised by obsolete equipment in dire need of modernisation. Modernisation is essential to ensure the reliable and secure functioning of the national electricity systems and to achieve energy savings and thus greenhouse gas reductions.

Regional electricity cooperation in Central Asia presents clear technical, economic and environmental benefits. Following the rationale underlying the creation and functioning of the Central Asia Power System on a centralised basis during Soviet times, regional cooperation facilitates the most efficient use of regional energy resources – to simplify, hydropower produced in Tajikistan and Kyrgyzstan in the summer and thermal electricity production in Uzbekistan and South Kazakhstan in the winter. However, following the disintegration of the Soviet Union, Central Asian states are increasingly advocating energy independence. Reduced regional cooperation, following initiatives to achieve national energy independence, increases the energy and water inefficiency of the system (e.g. water spills instead of electricity exchanges). This evolution, in connection with disputes on transit arrangements and fuel pricing, has had direct consequences for the reliability and security of electricity supply and the functioning of the electricity systems.

¹ University of Aberdeen, Centre for Energy Law. This study has been written under the mentorship of Mr. Kanat Botbaev and benefited from excellent comments and input by Matteo Barra, Steivan Defilla, Zafar Samadov and Ramazan Zhampissov – all at the Energy Charter Secretariat. All views defended in this study and possibly remaining errors are the author’s.
Scope of the study

This study focuses on the modernisation of the electricity infrastructure in Central Asia, in particular energy efficiency improvements and clean energy development. The starting point of the analysis is the recognition by the Central Asian states that the modernisation of electricity supply depends on the active participation of private – and in particular foreign – investors in these markets. Private capital and technology, know how and operational efficiency is needed to improve the efficiency of the system and finance the investments needed to ensure secure and sustainable energy supply. Taking an investor’s perspective, this study examines the regulatory framework governing the electricity market in Central Asia and questions the extent to which these rules and the ongoing reform initiatives provide a sufficiently strong basis for investments in the modernisation of energy supply. Taking into account the capital intensity and long term payback period of electricity investments, together with the perceived weaknesses of the general investment climate in Central Asia, this study focuses on investment risks and available protection against the occurrence of these risks.

The analysis covers Tajikistan, Kyrgyzstan, Uzbekistan and Kazakhstan. The case of Turkmenistan is only partially discussed given that the Turkmen electricity system largely functions independently from the Central Asia Power System and is confronted with less acute challenges than the other countries. In addition, this study to some extent looks at cooperation with Afghanistan and Pakistan, as well as Russia and China, especially in relation to the possibility to export surplus power to these countries and in relation to the role of Russia and China as major foreign investors in the region. As will be seen, the possibility to export electricity to neighbouring states can be an important component of the financial viability of large power plants in the region (additional off-taker, with possible higher solvency and international guarantees). However, regional cooperation – or the creation of an integrated regional electricity market – is not the main focus of the present study. Instead, this work looks at regional cooperation and the export of electricity to neighbouring countries as a way to facilitate investments in the modernisation of electricity supply and to improve energy efficiency in the region – not as an objective as such.

Besides the modernisation of the electricity production and network infrastructure in Central Asia, the analysis includes energy end use efficiency and demand side management, with a particular focus on electric heating, and electricity supply for irrigation purposes – two main sources of electricity consumption in Central Asia characterised by high inefficiency. Here also, as will be seen, the regional dimension plays a crucial role. Because of energy inefficient demand, in harsh winter conditions (heating) or in the summer (irrigation), states can face the necessity to exceed the agreed quotas of electricity off-take from the network. Given the interconnected nature of the Central Asia Power System, this national behaviour has consequences for security and reliability of supply in the entire system, as illustrated by the 2008 supply crisis.

Methodological approach

In recent years, the topic of regional electricity cooperation in Central Asia has benefited from particular attention from international organisations (World Bank, Asian Development Bank, European Bank for Reconstruction and Development). Different reports have been produced analysing the economic and technical benefits of maintaining and reinforcing the regional approach to electricity supply developed during Soviet times. More recently, international organisations have looked at the acute energy challenge that Tajikistan is facing in the winter, together with the ambitious but controversial

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2 The question of the pricing of transit flows has been covered in a previous study by the Energy Charter Secretariat and is thus excluded from the scope of the present analysis.


plans of Tajikistan and Kyrgyzstan to build large hydropower plants to supply electricity to Afghanistan and Pakistan.\textsuperscript{5} International organisations have also started to look at the specific case of clean energy development in the region.\textsuperscript{6} Building further upon these existing analyses, the present study aims to identify common challenges that Central Asian countries are facing regarding the modernisation of their electricity sector.

This analysis aims to provide added value by adopting a mainly legal and regulatory perspective to the electricity sector modernisation challenge in Central Asia. This study therefore examines the regulatory structures that the countries concerned have created – and still are developing – in order to stimulate investments in the electricity sector. The regulation of the national and regional electricity markets – and more specifically the issue of electricity and heat pricing – is key in this respect.

This work adopts a comparative law approach. The objective is to draw lessons from the regulatory experience accumulated in the different Central Asian countries regarding the organisation of electricity and heat markets, energy efficiency improvements, the development of clean energy and the promotion of foreign investments. Moreover, the creation of functioning electricity markets in Central Asia can benefit from the regulatory models developed in the European Union (EU) and in Russia. Kazakhstan, for instance, closely studied the EU (more specifically the German and Dutch) approach to energy efficiency to develop its Energy Efficiency Programme until 2020.\textsuperscript{7} Kazakhstan also took the EU and Russian liberalisation experience into account to design its new electricity market architecture.\textsuperscript{8} In particular, the conclusion of long term regulated capacity contracts to attract private capital in production capacity closely resembles Russia’s capacity-based scheme to the promotion of electricity investments.

Taking into account the external energy policy of the EU aiming at bringing Central Asia closer to the EU energy market through regulatory convergence and the influence exercised by Russia in the context of the Commonwealth of Independent States and the Eurasian Economic Union, the EU and Russian electricity market models have a particular geopolitical importance for Central Asia. Moreover, Central Asia is of great strategic relevance for China.\textsuperscript{9} The EU, Russia and China are interested in obtaining or maintaining access to energy resources in the region. The present analysis aims to go beyond the politicisation characterising EU, Russian and Chinese (regulatory) influence in the region, by looking at the specific issue of investment protection in the electricity sector.

In particular, the study examines how international law can assist Central Asia to stimulate investments in the modernisation of the electricity infrastructure. The focus is on international investment law – a key discipline of the Energy Charter Treaty (ECT). This analysis thus contributes to assessing the role that the ECT can play in stimulating clean and energy efficient investments in the energy sector. All countries covered by the present study are characterised by a relatively unstable and unpredictable investment climate. Given the capital intensive and long term nature of power plants, regulatory risks – especially risks relating to the formation of electricity and heat prices – are an important barrier to investment activities in the electricity sector.

Given their strategic interests in the region, Russia, China and to a lesser extent the EU member states finance projects in the electricity sector under preferential conditions. Moreover, international finance institutions provide financial assistance to the development of the electricity sector in Central Asia given the social, economic and environmental consequences of the current obsolete state of the electricity sector.

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\textsuperscript{5} See e.g. World Bank, Key Issues for Consideration on the Proposed Rogun Hydropower Project (July 2014), \url{www.worldbank.org/en/region/eca/brief/rogun-assessment-studies}.  
\textsuperscript{6} See UNDP reports on Clean Energy in Kyrgyzstan and in Tajikistan.  
\textsuperscript{7} See Section 14, Postanovlenie Pravitel’stva Respubliki Kazakhstan Ob utverzhdenii programmy “Energosberezhenie – 2020”, 23 August 2013, No. 904 (hereinafter “the Kazakh Energy Efficiency Programme until 2020”).  
\textsuperscript{9} Marlene Laurelle and Sebastien Peyrouse, \textit{The Chinese Question in Central Asia: Domestic Order, Social Change and the Chinese Factor} (London: Hurst & co, 2012).
system. However, in the medium and long term perspective, the participation of foreign capital in the modernisation of the Central Asian power sector depends on the creation of adequate and stable investment signals. In this context, it is essential to examine the extent to which the ECT and other investment protection instruments can protect foreign investors against changes to the financial and regulatory conditions governing their investments in the modernisation of the electricity sector of Central Asian countries. It must be noted that foreign investors could invoke international investment protection disciplines against the implementation of environmental policies – possibly resulting in a “regulatory chill” by states in this field. This study focuses on the stabilising role of investment arbitration in the electricity sector – it does not address the possibly negative impact that international investment law can have on the readiness of states to adopt ambitious environmental policies.10

**Conclusions**

This analysis concludes that international investment law (e.g. the investment regime of the ECT) can play an important role in reinforcing the credibility of the regulatory framework that Central Asian countries develop to attract investments in the modernisation of electricity supply. By providing an element of “external commitment” to foreign investors, the neutral investor-state dispute resolution procedure of the Treaty can play a role in depoliticising regional cooperation in the electricity sector. The participation of foreign investors, in connection to the independent ECT guarantees, can contribute to addressing the current acute problems relating to the lack of enforcement of bilateral agreements regulating electricity exchanges and minimising political misunderstandings between the Central Asian countries. Improved stability of investment and trade conditions will facilitate the financing of power plants and, with reduced risk premiums, contribute to limit the costs of the necessary modernisation process.

However, evidently, the ECT provisions can only play a role if Central Asian states develop a sufficiently solid regulatory framework that enables the financial viability of electricity investments. In this respect, Russia’s electricity market reform and the creation of the EU internal energy market provide interesting lessons. On the one hand, the EU experience is particularly relevant for the cooperation of sovereign states in the electricity sector, cross-border electricity trade, non-discriminatory access to the network and the harmonisation (or “approximation”) of national rules. Moreover, important lessons can be learned from the creation of independent regulatory authorities. On the other hand, the Russian experience is relevant for the design of specific regulatory structures to attract investments in the modernisation of energy production in relatively unstable and unpredictable investment climates (e.g. regulated capacity agreements).

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List of recommended tasks to improve investment security in the Central Asian electricity sector

Task 1: Re-conceptualisation of the notion of “energy security” in Central Asia

Different independent studies have confirmed the environmental, social and economic benefits of regional electricity cooperation in Central Asia. The states themselves have repeatedly acknowledged these benefits in the intergovernmental agreements concerning electricity supply and water-energy issues in Central Asia. However, in practice, the post-Soviet drive towards national energy independence has affected the functioning of the Central Asia Power System. In strong contrast to the cooperation principles recognised in the regional electricity agreements, the national electricity laws and electricity strategies of the Central Asian countries take a national-centred approach. The priority is on national energy independence and self-sufficiency. Regional electricity cooperation is mainly seen as a mechanism to achieve export opportunities. In this context, there is a need to re-conceptualise the notion of energy security in Central Asia. The EU approach of diversification of energy supply – instead of self-sufficiency or autonomy – can provide an interesting starting point to develop a new national and regional approach towards security of electricity supply in Central Asia.

Task 2: Draft investment agreements governing the export-import regime of new electricity investments with foreign participation

The export of electricity can be a way for foreign investors to mitigate the risk of non-payment and low tariffs in the host country. Investment agreements between foreign investors in electricity production and the exporting and importing countries could include a clear export-import regime. Depending on the harm caused to investors, this regime could be enforced based on international investment arbitration, e.g. the investment regime of the ECT. This could contribute to depoliticise the debate on regional electricity cooperation in Central Asia and provide guarantees to states that the arrangements governing electricity exchanges will be respected.

Including export guarantees in international agreements governing the construction of new power plants in Central Asia is not a novel approach. However, existing agreements remain limited in scope and breadth. In this context, a more elaborated export-import regime, together with a guarantee of contractual enforcement before independent arbitral tribunals, could contribute to address the lack of trust that currently affects electricity cooperation in the region.

Umbrella clauses under international investment law (e.g. the ECT) provide a guarantee of protection to investors against interference with their contractual rights. The exact scope of application of umbrella clauses is subject to interpretative uncertainty. Arbitral tribunals disagree on the type of commitments (contractual – regulatory; sovereign – commercial) that are protected under umbrella clauses. It will be important to draft electricity exchange commitments by taking into account this interpretative uncertainty so as to ensure investment protection in case of failure to respect these arrangements.

Task 3: Protection of tariff and payment commitments, in connection to financial transparency and quality of electricity supply

Investment arbitration (e.g. on the basis of the investment regime of the ECT) can provide protection to foreign investors concerning the financial basis of their investments. In particular, investment law can shield investors from tariff decisions that prevent them from recovering their capital and operating expenses – a real risk in most countries covered by this study given a tradition of electricity tariffs below cost reflective levels. International investment law can thus protect investors from the refusal by states to honour tariff commitments and other key arrangements relating to the financial viability of power plants, e.g. the
implementation of payment collection schemes. However, protection under international investment law will depend on the exact commitments made to foreign investors in the electricity sector. To stabilise the investment climate in the electricity sector and attract foreign capital and technology in the modernisation of the electricity infrastructure, it is essential to formulate clear tariff commitments (e.g. the commitment to increase prices to cost reflective levels or the commitment to implement payment collection schemes). Certain arbitral tribunals (e.g. *Total v. Argentina*¹¹ and *AES v. Hungary*¹²) have conditioned the recognition of investors’ legitimate expectations to the presence of stabilisation promises, in addition to tariff or pricing promises. From an investor’s perspective, tariff and payment commitments will have to establish that these financial and regulatory instruments will remain unchanged during the payback period of the investment, unless specific circumstances occur. To ensure stable investment conditions that can be enforced before arbitral tribunals, the regulatory (electricity law and/or tariff regulation) and contractual (investment agreement) framework governing electricity investments will have to delimitate the scope for possible future changes of tariff levels by the government. These *ex ante* guarantees will minimise the risk that investment tribunals would refuse to recognise investors’ tariff and payment expectations.

As highlighted by the 2010 Kyrgyz crisis, the enforcement of tariff increases will only be socially acceptable if transparency of tariff regulation is guaranteed, together with clear commitments by investors to improve the quality of electricity supply by modernising the energy infrastructure. The regulatory framework governing electricity and heat tariffs, and the tariff provisions of investment agreements, must be drafted by establishing a clear obligation for regulators and investors to ensure the transparency of the price formation process, in connection to a clear monitoring procedure of investors’ investment obligations.

**Task 4:**

**Stabilising renewable energy tariffs on the basis of the Kazakh approach**

As highlighted by the EU experience, renewable energy investors face the risk of unilateral changes to the tariff conditions that govern their investments. In Central Asia, this risk is exacerbated by the higher political sensitivity of price increases, non-payment, solvability concerns relating to the main electricity off-taker and weaker institutions, in connection to the higher capital costs of renewable energy projects and the perceived operational challenges that variable energy production represents for the system. In order to mitigate the risk premium – and thus cost increase – associated to regulatory risks, it is essential to provide clear stabilisation commitments to investors, together with clear guarantees regarding the solvability of the counterparty to renewable energy transactions. The Kazakh Renewable Energy Law contains stabilisation guarantees that protect investors against *ex post* changes to renewable energy tariffs. Investors could invoke the disciplines of international investment law (e.g. the fair and equitable treatment clause of the ECT) to seek to enforce these stability commitments before independent arbitral tribunals. Moreover, umbrella clauses (e.g. the umbrella clause of the ECT) could provide a legal basis to enforce respect of PPAs that renewable energy investors sign with the administrator of the renewable energy scheme. However, to minimise the risk for renewable energy investors in Kazakhstan, additional guarantees are needed regarding the solvability of the main off-taker of green power – the Settlement and Financial Centre. Moreover, investors need to be protected against unilateral changes to – or failure to implement – the network-related benefits provided to renewable energy projects (e.g. connection and access to the network). To improve investors’ perception of stability of the scheme and increase their trust in the support mechanism proposed, it is necessary to draft renewable energy mechanisms in Central Asia by taking into account the possibility for investors to successfully enforce commitments of support before investment arbitration. Further work is needed on the interaction between renewable energy regulation and international investment law, taking into account the specific risks that investors face in the development of renewable energy sources in Central Asia.

Besides these *ex post* stabilisation guarantees, *ex ante* measures are needed to control the amount of projects eligible for support. By controlling the amount of project to be subsidised, states limit the risk of

¹¹ ICSID Case ARB/04/1 *Total S.A. v. Argentina* (Decision on Liability of 27 December 2010).
excessive burden on the public budget – and thus indirectly contribute to mitigating the risk of regulatory changes for renewable energy investors.

**Task 5:**

**Finance energy efficiency improvement investments based on the right to energy savings**

Guaranteeing to investors in energy efficiency improvement measures the right to “energy savings” could be a way of contributing to the financing of the modernisation of the energy sector in Central Asia without imposing tariff increases on end consumers. To implement this approach, it is necessary to clearly recognise investors’ right to “energy savings” in national energy efficiency law – or to reinforce the existing legal basis of this right. This legal drafting exercise must take into account the definition of “investment” under international investment law (e.g. the investment regime of the ECT) so as to ensure that foreign investors can enforce their right to “energy savings” before investor-state arbitration.

**Task 6:**

**Design specific independence guarantees tailored to higher risk of government interference**

Following the reasoning underlying the creation of independent regulators in the EU electricity market, independence of regulatory authorities in Central Asia is needed to ensure that decision making in the electricity market corresponds to the long term interest of the market – not to short term political (or even populist) concern. This independence is particularly important regarding tariff decisions – a key factor for the financial viability of investors and at the same time an issue of high political sensitivity. Given higher centralisation of power and a weaker institutional and administrative framework, it can be doubted that the EU requirements to regulatory independence can be transposed as such to Central Asia. Specific guarantees (in investment agreements, in addition to regulatory commitments) need to be developed in order to ensure that decisions are taken independently. Investment arbitration could be used as external tool to enforce commitments of independent decision making in the sector (e.g. commitments relating to the structure, financing and powers of regulatory authorities).