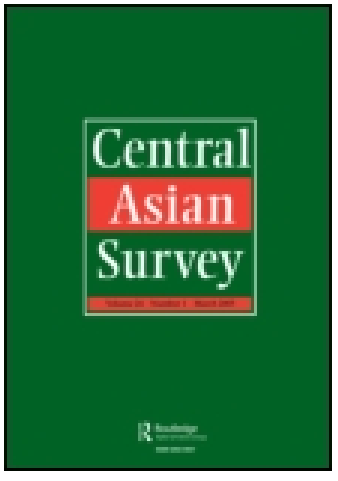

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Mr Light and people's everyday energy struggles in Central Asia and the Caucasus: an introduction

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The perception of Central Asia and its place in the world has come to be shaped by its large oil and gas reserves. Literature on energy in the region has thus largely focused on related geopolitical issues and national policies. However, little is known about citizens' needs within this broader context of commodities that connect the energy networks of China, Russia and the West. This multidisciplinary special issue brings together anthropologists, economists, geographers and political scientists to examine the role of all forms of energy (here: oil, gas, hydropower and solar power) and their products (especially electricity) in people's daily lives throughout Central Asia and the Caucasus. The papers in this issue ask how energy is understood as an everyday resource, as a necessity and a source of opportunity, a challenge or even as an indicator of exclusionary practices. We enquire into the role and views of energy sector workers, rural consumers and urban communities, and their experiences of energy companies' and national policies. We further examine the legacy of Soviet and more recent domestic energy policies, the environmental of energy use as well as the political impact of citizens' energy grievances.

Keywords: energy; oil; gas; electricity; moral economy; conflict; identity; Central Asia; Caucasus; Afghanistan

Introduction

The 2010 film *Svet-Ake*, directed by Aktan Arym Kubat, poignantly illustrates the challenges people face in accessing electricity. In the small Kyrgyz village of Kok-Moinok, Mr Light connects homes to the electrical grid for those who cannot pay for it. He tinkers with a small wind turbine as an alternative future to their current infrastructure. He is loved by the villagers for his efforts, but is arrested by the police for stealing electricity. However, during the 2005 overthrow of President Askar Akaev's government, his would-be persecutors are replaced and he is freed. At the same time, a young man from the area aspires to become a parliamentary deputy in the new government and is looking for the support of the villagers. He is a populist, giving hope to the community's desire for development and prosperity. He brings in Chinese investors, but hosts them with the same extravagance and disregard for local sensibilities that had led to Akaev's ousting. Mr Light is caught in the middle of this and his vision of accessible electricity remains unrealized. This fictional account highlights the struggles for energy that Central Asian citizens are faced with, the multiple actors involved at different levels in shaping the local energy economy, and how everyday energy needs, national policy-making and political events may influence each other.

The energy sector in Central Asia and the Caucasus presents great contrasts. It has massive oil and gas reserves, as well as large hydroelectric plants generating surplus capacity that can be

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exported to neighbouring countries. Yet, daily experiences indicate that fuel and electricity supply to citizens is fragile, dependent on a largely decrepit infrastructure and plagued by mismanagement and corruption. While some problems existed during the Soviet Union, the situation has been exacerbated by a number of changes. The Soviet system of integrated energy distribution networks has become more complicated between sovereign states that no longer have common agreements for sharing basic resources. Some countries, such as Uzbekistan, have withdrawn from these networks, which has caused energy deficits and affected neighbouring countries' energy security. Furthermore, market reforms and privatization of strategic infrastructure has led to a change in pricing with a direct impact on businesses and citizens.

The provision of an extensive energy infrastructure and generating capacity in Central Asia was a great achievement of the Soviet Union, but this achievement is no longer matched by the reliability of services or adapted to citizen's ability to pay for energy services. This is particularly the case since the lack of investment in many parts of the region after independence has led to further deterioration of the infrastructure. The decrepit domestic infrastructure contrasts sharply with people's growing expectations, and continuing demands for energy security which are rooted in Soviet habits of subsidized access to utilities and the resulting perception of energy as a basic public good. These views go beyond the promises of benefits from large-scale projects such as big hydropower dams coming online. Policy-makers often do not address immediate concerns or explain changes for the future, and what this will mean for Central Asian citizens.

These bigger political and infrastructural issues have created a mismatch between public demands and policy decisions. The 2008/09 energy crisis in Kyrgyzstan is an example of the situation. Rolling blackouts around the capital Bishkek forced business owners to resort to purchasing generators to keep businesses open, while apartment blocks periodically turned into ghostly concrete and brick shells with wandering, flickering candles. In the following year, the continuing energy crisis and poorly devised government policies drove people to voice their demands in the streets for energy tariffs that met people's ability to pay for them (see Wooden's (2014) contribution in this issue on how this became a factor in the 2010 revolution). Residents in the town of Naryn protested at proposed price hikes, especially as winter in the high valleys of central Kyrgyzstan lasts for six months. Generators have now become part of the Bishkek cityscape as a kind of 'insurance'. Although this cannot be a permanent solution, fundamental issues and how to address them are not a widely discussed topic, in part because this is politically sensitive, but also because the 'stuff' of energy and associated technologies and business models are poorly understood by the wider public. The lessons from the energy crisis have not been learnt and challenges are likely to repeat themselves in the winter of 2014/15 as there is an energy deficit due to a low rain cycle and mismanagement.

Tajikistan provides another example of people's changing energy strategies in response to post-independence energy sector changes. In early 2008, prolonged cold spells increased people's use of electricity for heating. At the time, Tajikistan limited industrial and commercial electricity use, and increased imports. However, in December 2009, Uzbekistan withdrew from the series of high-voltage lines and substations that connect Central Asian republics (United Energy System), severing their lines with Tajikistan, and so creating further energy shortages.[1] In addition, the Tajik Aluminium Company (TALCO) is a huge industrial consumer of electricity and is often seen as a contributor to the lack of electricity, particularly in the winter (International Bank for Reconstruction and Development/The World Bank 2012). The additional cost of electricity usage in some rural areas has forced people to turn to alternative fuel sources. There were reports of higher incidents of tree cutting, putting some communities at greater risk of landslides and mudslides (OCHA 2008). In this issue, Tobias Kraudzun (2014) examines the choices available to Tajikistani citizens in the Eastern Pamir under such conditions, and

examines the role of government and development agencies in supporting these choices – not necessarily to the best effect.[2]

The international dimensions of the exploitation of available energy resources, and currency receipts through its export as a basis for government power in Kazakhstan, Turkmenistan and Uzbekistan are well explored (Franke-Schwenk 2012; Kendall-Taylor 2012; Overland, Kjaernet, and Kendall-Taylor 2010; Najman, Pomfret and Raballand 2008). Yet the everyday consequences of these international dimensions and the conflicts over energy distribution have received much less attention. Despite the prominence of these issues, scholars have hardly attempted a closer look at the actions of energy producers and consumers in the region.[3] Work on energy policies and their consequences tends to remain confined to geopolitical visions of a new 'Great Game' (Kleveman 2003; Starr and Cornell 2005), with Central Asian governments seeking profitable economic and political deals with China, the European Union or Russia. The effects of such transnational manoeuvres on the domestic energy market and the region's citizens, or government response to domestic demands hardly feature in this 'game'.

Recently the role of elites and government actors in shaping these policies, and reaping their benefits, has come under scrutiny (Heinrich and Pleines 2012; Overland, Kjaernet, and Kendall-Taylor 2010). Meanwhile ordinary citizens in the region – be they oil workers, government employees, entrepreneurs, school children or pensioners – are all affected by the reliability of access to sources of heating, lighting and motorized transport, and their ability to pay for it. This issue bridges the gap between the discussion of Central Asia and the Caucasus as an energy hub for Eurasia and the paucity of information on citizens' everyday experiences of energy use,[4] and their strategies to overcome challenges; these include the popular contestations mentioned above.[5]

With these serious issues in mind, this multidisciplinary issue – 'Everyday Energy Politics in Central Asia and the Caucasus: Citizens' Needs, Entitlements and Struggles for Access' – explores the role of energy in people's lives throughout Central Asia and beyond. It brings together legacies of the Soviet era with changes since independence that have shaped people's patterns of energy use and their strategies for coping with changes. There are two emerging cross-cutting themes: Soviet legacies and notions of entitlement which underpin people's perceptions of energy provision.

Intertwined historical experiences of energy policies and subsequent expectations and demands have spurred innovations, but also popular unrest. Many citizens continue to have expectations that were fostered during the Soviet era – that access to energy should be universal and cheap.[6] The continued (over-)use of predominantly Soviet-era infrastructure results in people lamenting over unreliable services. The articles in this issue explore how Soviet legacies and perceptions of entitlement continue to shape people's understanding of energy provision and use, and, in some cases, how people are beginning to assert their own expectations in energy sector developments.

Soviet policies and legacies

The Soviet era promoted the largest expansion of energy production and consumption in the region, and helped foster a perception of universal entitlement. Energy sector development in Soviet Central Asia benefitted from the push to electrify all of the Soviet Union and promote industry. Addressing the Moscow *Gubernia* Conference of the Russian Communist Party (Bolsheviks) on 21 November 1920, Vladimir Lenin announced that 'Communism equals Soviet power plus the electrification of the whole country.'[7] Under this slogan, the country set out on an ambitious plan developed by the State Commission for the Electrification of Russia (GOELRO)[8] to base development on electricity and to improve economic output.

In Central Asia before the October Revolution, there were only a few energy-generating facilities which mainly supplied electricity to nearby industrial projects. In Kyrgyzstan, for example, there were five electricity stations built in 1913 and 1914 (Tuleberdiev, Rakhimov, and Belyakov 1997). Hydroelectric technology was also being used at that time in the region; a Tajik border post in Khorog had its first small hydropower station in 1913.[9] As industry grew, small towns began to receive electricity stations together with hydroelectric power stations (Karybekov and Sarybaeva 2004, 46). As part of the second five-year plan in the 1930s, many small-scale hydropower and thermo-electric power stations were installed to provide electricity for the agricultural sector. *Sovkhozes* (state farms) and *kolkhozes* (collective farms) received electricity in the years to come. The Soviet push for electrification also extended to Afghanistan, starting from the 1950s and initiating large-scale hydroelectric projects completed in the 1960s.

The energy revolution was not only intended for industrial and agricultural development to stimulate economic growth, but also to provide the people with the benefits of technological and economic advances, as well as 'modernity' or '*tsivilizatsiya*' (Russian, 'civilisation'). The period of expansion in the 1960s, particularly with thermal power plants located in larger towns, also coincided with Khrushchev's building campaign to bring people to cities and provide affordable, modern apartments with their own kitchens (Reid 2005, 2006). However, for rural communities, particularly in mountainous areas, small-scale hydroelectric stations and generators were still the most economic and feasible way of providing electricity.

While small-scale electricity stations were being installed throughout the region, there were also plans for large-scale hydroelectric power stations. Once these started operating in the 1960s and 1970s, electricity generation capacity rose significantly. In Kyrgyzstan, for example, from 1970 to 1990, electricity generation from hydropower rose over 650% in terms of millions of kilowatt-hours, and again rose over 84% from 1980 to 1990 (Tuleberdiev, Rakhimov, and Belyakov 1997, 134). During this period five hydropower stations collectively known as the 'Naryn cascade' located in southern Kyrgyzstan came online. The largest of these is Toktogul Hydroelectric Power Station with a multi-year storage capacity that generates over 90% of all electricity in the country. In Tajikistan, the Nurek Hydroelectric Power Station forms an important part of the electricity-generating capacity in the country, until larger projects planned in the Soviet era, such as the Rogun Hydroelectric Power Station (currently under review), are completed.

Oil boom and energy (mis)management

The development of the energy sector was supported by the discovery of large oil fields and the export of oil. This allowed for unparalleled economic growth, but came at a cost. Early oil production was centred in the Caucasus and on the Caspian Sea, but from the 1950s onwards more production centres were located in the Volga–Urals region (Dienes and Shabad 1979, 56). With the discovery of large oil and gas fields in western Siberia, the centre of production again shifted to that region, with intensified exploration and development from the 1960s.

The USSR was able to use the benefits of international oil and gas trade. Selling oil on the export market allowed the Soviet Union to enjoy substantial hard-currency revenues. The oil price surges in the mid-1970s enabled the Soviet Union to cover shortfalls in other sectors and help neighbouring countries in Eastern Europe through the additional hard currency revenue. For example,

> [i]n 1976, in response to a disastrous harvest, resulting grain imports and a huge trade deficit of the previous year, the USSR allocated two-thirds of the increment in petroleum output for export, shipping abroad close to 30% of its output. (Dienes and Shabad 1979, 35)

The ability to produce and export so much oil at the time of the price boom helped to provide the Soviet Union with additional economic stability and power.[10]

Throughout the 1970s the Soviet Union profited from the high price of oil. Indeed, the Union increased the volume of net energy exports by 270% from 1970 to 1988 (Gustafson 1989, 55). The energy exports 'accounted for as much as 80% of Soviet hard-currency income' at the beginning of the 1980s (57). Thane Gustafson argues that this boom came at too high a price; it made sense to export more oil throughout the 1970s due to the high price, but there were associated issues that suddenly became apparent once the price fell. For example, the increasing costs of production meant that the rate of return on high prices was less. By the 1980s there was heavy criticism of Brezhnev's management of the foreign-trade policy which was supported by the energy exports. '[Gorbachev] accused [Brezhnev] of masking the worsening economic situation with massive exports of energy and of wasting the hard-currency proceeds mainly on "current tasks" instead of economic modernization. In short Brezhnev had squandered his oil income' (57). Although, as Gustafson notes, Brezhnev's policy may not have necessarily been a bad one at the time – as it sought to buy grain for livestock and provide economic support to Eastern European allies – it was flawed because the system which enabled hard-currency surpluses did not adapt to economic changes or curb high maintenance costs. He continues, 'decision making in foreign energy trade remained opportunistic, changeable, and inconsistent' (57). The policy was focused on supply, 'seemingly oblivious to runaway energy demand, and thus condemned to ever more costly operations in ever more remote wilderness' (41).

The problems extended not just to the type of energy mix and policies, but to the management of the sector. There were 12 Soviet government bodies responsible for various aspects of the energy sector. Furthermore, there were a number of hierarchies between enterprises and their ministries that created distance and inhibited close communication (Dienes and Shabad 1979, 264–265). This created difficulties in coordinating plans and improving efficiency. There was an administrative reform in the 1970s, but this did not apparently improve the sector's overall efficiency, nor significantly change policy decisions. Gustafson argues that conflict had been built into the government structure, which discouraged efficiency and coordination. He notes,

> Stalin exploited conflict to maximize the information flowing to him and hence his control. Multiplication of reporting agencies, proliferation of watchdogs, institutionalization of mutual suspicion, overlapping jurisdictions – these are characteristic feature of the Soviet administration […], no less under Gorbachev than his predecessors. (Gustafson 1989, 311)

This led to a situation where ministries did not follow economic standards, but fought for their 'fuel' and their 'turf'.

Soviet legacies

The development of the energy sector during the Soviet Union left the independent republics with an extensive energy infrastructure, the technical capacity for its exploitation and further development plans. Yet the republics also inherited policies that were not market driven and complex administrative structures that hindered communication and coordination.[11] Furthermore, the physical infrastructure that connected the various republics was no longer overseen centrally, each country now making independent decisions on how to use the energy network and resources on their territory. Since 1991 the domestic energy infrastructure in many former Soviet republics has been in a state of decline rather than further development (although Azerbaijan, Kazakhstan have made improvements, as well as Armenia and Georgia as explained in Strakes (2014) in this issue). The infrastructure has not been maintained or replaced, and is in some places on the verge of collapse, particularly in Kyrgyzstan and Tajikistan (International Crisis Group 2011). Energy theft and corruption in the sector have also led to significant discontent among citizens, who see

energy as an entitlement from the Soviet period that is now being squandered. Kazakhstan has also struggled in this area. Michael Barry notes, 'Kazakhstan suffers from an inefficient domestic delivery system and the failure to utilize natural gas obtained in oil extraction operations' (Barry 2009, 45). Things have improved in the country, but it is likely that improvements in the domestic infrastructure are not necessarily felt in all parts of the country.

However, increasing foreign direct investment in the natural gas and oils sectors of Azerbaijan – which acts as a hub connecting Central Asia to Europe – Kazakhstan, Turkmenistan and Uzbekistan (Paswan 2013) has meant that those countries have improved the infrastructure around those industries to ensure that modes of transportation have improved. China and South Korea have invested significantly in these countries to secure energy exports. The modernization of the export infrastructure is critical. This is a particular issue for Kazakhstan: it has large oil and natural gas reserves, and investment has been strong, but slow due to an insufficient transportation and export infrastructure (Barry 2009, 36; International Crisis Group 2007, 12–13). Kyrgyzstan and Tajikistan have much less foreign investment in their energy infrastructure, as there is less money to be made from hydropower than from oil. The Russian state company RusHydro is supporting Kyrgyzstan to build the US$727 million Upper-Naryn Cascade, a series of four hydropower dams (Kalybekova 2014b). RusHydro is set to receive a majority of the profits until they recoup their investment. Also, Kyrgyzstan sold its bankrupt natural gas company, Kyrgyzgaz, to the Russian state-run gas company, Gazprom, for a token US$1 (Kalybekova 2014a). The country hopes that improved gas service can be restored to Kyrgyzstan, especially for parts of southern Kyrgyzstan which, when the deal took place, had been without natural gas for several weeks, as Uzbekistan had stopped transmission.[12]

One of the main legacies of the Soviet era that is now creating new tensions in Central Asia is the management of energy and water resources. In the Soviet Union, the republics would follow the plans of the United Energy System of Central Asia. This included a water and energy barter deal. Upstream countries such as Kyrgyzstan and Tajikistan – where major rivers originate – would reduce the amount of energy generated through hydroelectric plants in winter and would be supplied with electricity from neighbouring countries. In return, water would be released in spring and summer to provide for cotton crop irrigation. The electricity generated from the spring and summer release of water in Kyrgyzstan and Tajikistan would be sent back to the neighbouring countries. Since all the republics (excluding Turkmenistan) were connected by the United Energy System, this enabled electricity sharing.

Since independence, this arrangement has slowly collapsed and seen the reversal of this trend. Kyrgyzstan and Tajikistan have gradually used more water in the winter months to generate electricity to meet domestic demand and released less water in spring and summer months to replenish their reservoirs. This has created tension with the downstream countries, especially with Uzbekistan, which maintains a large and thirsty agricultural base (Wegerich 2011, 287). Meanwhile poor energy infrastructure in Tajikistan and the heavy energy demands of the TALCO aluminium factory have caused severe drains on the system. As a result, Uzbekistan has largely pulled out of the energy ring, but nonetheless continues to draw some electricity from the ring as its own internal capacity is limited. This has prompted some governments, particularly Kyrgyzstan, to build their own internal rings (such as the Datka–Kemin high voltage line) to ensure energy security and become largely independent of the energy ring. These activities have also sparked discussion of water use and sustainable energy projects, with Uzbekistan objecting to large-scale projects, such as Kambar-Ata dams in Kyrgyzstan and Rogun in Tajikistan, and escalating regional tension by talk of 'water wars' (Lillis 2012).

These projects raise important questions about environmental impact, which was already an issue during the Soviet Union. The use of the Amu-Darya and Syr-Darya Rivers for irrigation in cotton-growing regions of Central Asia has led to the catastrophic drying out of the

Aral Sea. Furthermore, the heavy use of coal is creating pollution and health problems (Chandler 2000). In particular, the use of thermal plants is an environmental concern. In the late 1970s, Dienes and Shabad noted that 'thermal power stations are a major source of environmental deterioration through air pollution, slag disposal and waste heat removal. Soviet electric stations, for example, are responsible for about one-fourth of all air pollutants originating from stationary sources in the country' (Dienes and Shabad 1979, 202). With the slow deterioration of these plants and the lack of technologies to remove carbon dioxide from emissions, the environmental impact of the energy infrastructure continues to play a significant role in the region.

In addition, little revenue can be generated for the maintenance and improvement of the energy infrastructure, as tariffs remain heavily subsidized. Partly out of a sense of entitlement that was fostered during the Soviet era, but also due to populist moves by governments, particularly in Kyrgyzstan, electricity prices have remained heavily subsidized, but are not sufficient to support maintenance or instillation of new equipment. The switch to market-led prices in the energy sector has not been successful, primarily because the provision of energy and the upkeep of infrastructure are seen as responsibilities of the state. This means that provision cannot always be guaranteed because of the old infrastructure.[13] The frequent power failures in parts of the region, as well as well-founded suspicions over corrupt energy sales mean that citizens do not feel that they should pay for a service they are either not receiving or is not properly priced. The reactions of citizens to such felt injustices differ dramatically, as in the case of Kyrgyzstan's 2010 uprisings, described by Wooden (this issue), in contrast to the role of energy poverty as a focus of ethnic grievances among Afghani Hazaras, or the small-scale struggles against individual '*gazoviki*' in Azerbaijan described by Barrett (2014) in this issue.

How energy shapes individual and collective life

In light of local and global inequalities in access to energy, predictions of dwindling fossil fuels and dire warnings about the consequences of climate change related to unchecked carbon emissions, social scientists have been increasingly concerned with people's habits and attitudes to energy production and consumption (Nader 2010, cited in Strauss, Rupp, and Love 2013). Energy has been termed a 'master resource' (Strauss, Rupp, and Love 2013, 11), because it is often conceived of as an engine of progress, promising lighter workloads, physical comfort, connectivity and entertainment. The demand for this extremely valuable commodity has surged across the globe over the last 150 years; indeed, this period has been nicknamed the 'age of fossil fuel'. When queues for petrol or frequent blackouts reach citizens, such disrupted public access can quickly turn into full-blown political crises. Such discontents have perhaps joined the call for bread (or other basic foodstuffs) and work as the fundamental economic demands of the global citizenry. At the same time, most forms of energy are distributed through technological systems, a kind of 'magic' little-understood and often opaque to citizens. The consequent 'invisibility' of the stuff of energy, and the evasive concreteness of its substance (what is a 'watt', how big is a barrel of oil?) may thus have limited a highly significant field of social research.

> The staggering significance of energy as the undercurrent and integrating force for all other modes and institutions of modern power has remained remarkably silent, even in this era of so much talk about climate change, energy crisis and energy transition. (Boyer 2011, 5)

Yet 'energy' is not a monolith: there are great and significant differences in modes of production, and consequently in the consumption of electricity and fuel derived from oil, gas, coal and water.[14] Taking our cue from Watts (2008), we regard energy as artefact and artifice: it exists both as material substance and force, as well as creating social, political and economic structures

that organize societies (Strauss, Rupp, and Love 2013). For example, Timothy Mitchell has proposed that the contrasting materiality of oil and coal, their varying relations with labour power, and the differing ways of distributing them have shaped state–citizen relations, the emergence of democracy – and its limits (Mitchell 2009). The flow of energy is constructed (also literally, through specific infrastructures and points of delivery) to follow certain avenues. 'The production, delivery and consumption of energy make it the quintessential social good: one having […] a multi-faceted biography' (Wilhite 2005, 1). The life story of energy, for example in the form of barrels of oil shipped between the littoral states of the Caspian region and newly imagined (politicized) routes through Turkey bypassing Iran and Russia along the proposed Nabucco pipeline,[15] is one shaped by historic struggles and economic and political conventions. These histories and conventions are built into the fundamental concepts of energy. For example, it is a – politically highly freighted – convention that the price of oil is measured in US dollars, or that environmental clean-up costs of oil are not included in this price – though that of cleaning up nuclear fuel waste is (Mitchell 2009, 414, 418). The routes of energy production and distribution shape and are shaped by power relations, for example in the self-identification of certain states as energy superpowers, or the financing of higher education or cultural events by energy companies (cf. Rogers 2011, 2014). In this issue, Strakes provides a striking account of how the choice of energy technologies has been shaped by diplomatic relations with European countries involving the issue of genocide and diaspora connections in Armenia, while Georgia has invited Kazakhstan and Azerbaijan into the arena of energy expertise. Jäger (2014, in this issue) meanwhile focuses on the effect of the oil boom on western Kazakhstan, through the lens of labour, rural–urban relations and migration.

Studies of energy consumption have often been dominated by economists, and thus by rational-actor theories (Wilhite 2005, 2). These have rarely taken into account the choices consumers make, or been able to explain them beyond the principle of greed. Nevertheless, the ways people use energy in the region are shaped by the Soviet system of generation and distribution. Technological developments have increased energy consumption through goods, such as heating, lighting, clean clothes, plasma televisions, smartphones, travel or refrigeration (Wilhite 2005, 2). While heating and industry were the main users of energy, now other electrical goods are increasing demand, as is a fast growing population, still dependent on an energy infrastructure built for the needs of the previous century. In the absence of more qualitative studies of consumption, this issue focuses on the intersections between regional, national and local energy policies and their effects, the kind of demands people make in relation to what they judge to be fair energy tariffs and what they do in their absence.[16] Gassmann and Tsukada (2014) in this issue use data from the Kyrgyz Integrated Household Survey of 2011 to model the impact of electricity tariff increases on how poorer households in particular would cope, likely switching to other forms of heating fuel, as in Tobias Kraudzun's example, also in this issue, of Pamiris partially switching to solar power.

Uncharted waters: people's everyday experience and use of energy

As indicated above, Central Asian citizens might relate to energy as domestic consumers, but also through their work in the energy sector, in ministries, as experts in energy consultancy firms, as opposition leaders, in their businesses, as users of transport or indeed a combination of these roles. It is important to pay attention to the interplay of producer, consumer and citizen interests. What kinds of political considerations are brought to bear on energy policies in the region: international relations, labour power, 'ordinary' citizen demands or other factors (McNeish 2012, 34)? As Strauss, Rupp, and Love have pointed out, 'production, distribution, and consumption of energy almost never follow a simple logic of neoclassical economic efficiency; rather, people

tend to switch frames of reference among technical, economic, and cultural logics when considering their uses of energy' (Strauss, Rupp, and Love 2013, 11). This insight helps us focus on how people experience energy in their daily lives – in particular, how they struggle for access to it, what other benefits they may receive or what price they might pay, for example in deteriorating health, for energy production.

Tanja Winther's (Winther 2008) ethnography of the arrival of electricity in rural Zanzibar in the 1990s is an example of how changing relationships to energy can have multiple social and political effects: changing gender relations by keeping men more at home, in front of the television, changing the pattern and mood of night-time socializing, introducing the notion of 'customers' paying punctually, and allowing officials access to their homes to read the meter. In the case of Tanzania, Degani has described how residents manipulate limited access to electricity, laying claims through 'cleverness'. The author argues that this relationship to power grids is symptomatic of post-socialist contexts with tenuous neoliberal reforms that require citizens to improvise and make do, rather than empowering them (Degani 2013, 27ff.).

This issue provides an account of how energy experiences in Central Asia and the Caucasus might articulate conceptions of 'moral economy'. The term 'moral economy' was coined by Thompson (1971) and elaborated by James Scott (Scott 1977) and others to denote a broader conception of economy than one driven by the self-interested individual of neo-classical economics. Moral economies are not 'flat', space-like terrains, but animated with the sense of desires, obligations and entitlements that people feel towards each other in producing and exchanging things. Both the sources of energy in fossil fuels and hydropower, as well as electricity itself move between being seen and handled as a public good, and increasingly, as a marketable commodity. Who owns the wealth and potential resources stored under a nation's 'feet', how and according to what priorities should it be administered? The respondents to the studies by Chiovenda, Barrett and Jäger all articulate very clear, but also varied, ideas about what constitutes fair oil, gas and electricity management practices by the state and companies, and whether they meet these standards.

Proponents of the 'resource curse' theory see oil wealth in particular as hindering, rather than aiding the development of countries. They point to the way oil wealth can create imbalances in the economy by letting other sectors dwindle, the way governments may become less dependent on taxation, thus less accountable and, as 'rentier-states', more able to buy off opposition. A monopoly of oil wealth may thus prop up authoritarian regimes and elites who do not necessarily allow the fabulous profits of the oil trade trickle down (Sakal 2014). A case has been made for Azerbaijan, Kazakhstan and Turkmenistan suffering from the 'resource curse' (Overland, Kjaernet, and Kendall-Taylor 2010; Najman, Pomfret and Raballand 2008). Critics claiming 'oil is not a curse' have pointed to the real issue being the ownership relations and control of resources, rather than the resource per se (Jones-Luong and Weinthal 2010). More generally, critics have pointed to the ahistorical analysis inherent in the 'resource curse' thesis, and the way it is selectively applied to states emerging from colonial relations (similar to the 'failed states' notion) (Jones-Luong and Weinthal 2010; McNeish and Logan 2012, 3–4). They have also highlighted that weak institutions are generally blamed for the resource curse, for which technocratic solutions are sought. This approach ignores the fact that the avoidance of the resource curse in oil-rich countries such as Botswana, Chile, Malaysia or Norway is strongly associated with social struggle, often spear-headed by labour unions (McNeish 2012, 29). The complexities of access to and use of these resources are part of broader issues of relations to the environment and scales of control. For example, despite the pro-indigenous rhetoric of the Bolivian government, the peasants of the oil-rich Tarija region threw up road blocks in 2009, claiming their region should reap more profits from extracting gas in their land, rather than the national, populist government. Or should it in fact be the

indigenous people of the region benefitting, rather than the province itself (McNeish 2012, 66)?[17] Such complexities of scale and allocation are clearly described by Jäger in western Kazakhstan and by Barrett in the case of Baku residents.

In Central Asia and the Caucasus, so far most governments seem to have a firm hold on monopolizing and setting the terms of distribution (and often the production) of energy to citizens. Considering the Soviet legacy of a state–citizen social 'contract' over cheap energy, people's access to energy is likely to be linked to their relationship with the government/state. But there are signs in Kyrgyzstan and Kazakhstan, that 'terms of exchange' and conditions of production are increasingly challenged by the people. The riot in the western Kazakhstani town of Zhanaozen started by workers of three foreign oil companies seeking better worker rights is one such example. The police crackdown, in which 16 people were killed, indicates that increased benefits afforded by oil and gas wealth have neither improved the level of poverty experienced by many, nor secured significantly better labour rights. The events in Zhanaozen are an important reminder of the struggles of those who work in the energy sector.

The papers in this collection are grouped into three themes The first theme articulates 'energy dystopias'. Despite the efforts that have been made to improve energy distribution throughout the region, there are many citizens who struggle to secure energy sustainably or who have been constantly excluded from improvements. People's interactions with energy resources, their use, payment and benefits (or lack of them) as part of people's daily lives, their choices, opportunities, limitations and desires are examined closely. These daily practices and desires, in turn, frame their conceptions of and attitudes towards energy. Melissa Chiovenda (2014) presents the case of Hazaras of central Afghanistan, who see their continued energy poverty as a signifier of their oppressed second-class citizenship. The kind of demonstrations focusing on energy grievances in Bamyan have in the Kyrgyzstani case escalated to government overthrow in 2010, as analysed by Wooden.

A second theme centres on 'politics, practices and entitlements', where authors discuss developments in countries' energy sectors and reveal the limitations and opportunities of the Soviet legacies. Foreign direct investment into countries' energy sectors provides new opportunities while building on top of the former model, as described by Strakes in the case of Georgia and Armenia. Despite the very different paths of engagement that the Georgian and Armenian governments have chosen in relation to foreign investment in the energy sector, in both cases this engagement does not seem to have become a widespread grievance among the population. It is not just the legacy of the Soviet era plus new investments that bring change, but also the impact of new systems and lifestyles that are being developed out of the previous structures. These changes spell job prospects, but also challenges for populations, as in the case of the oil industry in western Kazakhstan analysed by Jäger. In his contribution on Azerbaijan, Tristam Barrett argues that privatization has not in fact fundamentally altered the state–citizen relationship in the domain of electricity. What *has* affected consumers however, is the installation of gas meters, and the machinations of meter readers ('*gazoviki*') to maintain a grip on their brokering power.

Finally, two articles explore 'resource consumption and its impacts'. Franziska Gassmann and Raquel Tsukada use statistical modelling to explore the fuel and heating choices people have in Kyrgyzstan, and to provide insight into the effects that higher electricity prices would have on different sections of the Kyrgyzstani population. Such electricity and fuel price hikes have in fact been initiated in summer 2014, the effect will therefore be immediately comparable. Tobias Kraudzun provides an equally detailed analysis of current energy choices, particularly in relation to heating, in Gorno-Badakhshan, suggesting both environmental consequences and discussing potential alternatives.

Conclusions

Mr Light, tapping electricity illegally for his fellow villagers; Hazaras demanding participation in the nation-state through electrification; middle-class residents in Baku debating the merits of electricity meters; or angry Kyrgyzstanis demonstrating against price hikes in the streets of Bishkek: all clearly desire access to energy that meets their ability to pay and view access to energy as something that a citizen should be able to take for granted. Yet all these actors have to juggle frequent blackouts and be resourceful – some every day, some periodically – in meeting their energy needs for cooking, washing, heating or transport through alternative means (Kraudzun, Chiovenda, Gassmann and Tsukada). Both the sense of entitlement and the frequently inadequate ways these demands are met are both legacies of the successful – albeit environmentally costly – call by Lenin to electrify the Soviet Union.

Yet the legacies of Soviet energy policies and new national and international political and economic energy constellations affect citizens in Central Asia and the Caucasus in a broader sense. The intersection of the state, companies and people's political expectations, coupled with their everyday energy needs and strategies are important aspects of people's experiences. The articles collected here indicate limitations and opportunities in people's choices and how these are being incorporated into the moral universes of consumers and producers (Strakes, Jäger, Barrett).

Human rights as well as political issues are clearly integral to these questions at a national and international level. This collection, however, also draws out the distinctiveness and connectedness of Central Asia's network of producers and consumers, their experiences and challenges through analyses that take into account neighbouring regions, including Afghanistan and the Caucasus. Beyond such a regional perspective, further research is needed to understand what people demand energy *for*, what opportunities access to various forms of energy gives or denies them. How do citizens depending, for example on a 'Mr Light', understand or ignore the technologies they rely on – and what difference might such understandings make? How might people make different judgments about the meaning of electricity, or particular energy sources such as oil, hydropower and solar power, beyond simply being a convenient sign of modernity? Can Timothy Mitchell's thesis of oil extraction creating particular social relations and weakening the position of oil workers be confirmed across Central Asia and the Caucasus? In Central Asian 'moral geographies' of energy, where and when might environmental issues fuelled by energy resources become relevant? This issue begins the exploration of such issues and hopes to inspire discussion on a topic that is only marginally understood, yet directly relevant to everyone's daily experiences in the region.

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Notes

1. The United Energy System is also called an 'energy ring', meaning the network of high-voltage transmission wires which allowed for balancing electricity needs, especially during peak hours.
2. We here outline but two examples in the region, for further details on particular histories of energy production and consumption, for example, in the Caucasus, refer to the individual contributions.
3. Donor engagement in Kyrgyzstan's energy companies has produced reports examining the various parts of the sector, e.g. http://www.energo.gov.kg/site/index.php?act=view_cat&id=19 (accessed September 23, 2013) or International Crisis Group (2007, 2011) reports.

4. By the 'everyday' we mean not just the daily use of different forms of energy, but the activities involved in the production, distribution and utilization of energy and how this shapes people's quotidian experiences.
5. We see this special issue as opening up such an enquiry, and there is much more need for research on these issues.
6. Overland and Kutschera (2012) have argued that Putin's government, for example, holds back in its ambitions to raise energy prices to recover costs for fear of popular protest at the disruption of this part of the social contract.
7. For the full speech, see http://www.marxists.org/archive/lenin/works/1920/nov/21.htm (accessed April 1, 2013).
8. GOELRO is the acronym of the Russian title *Gosudarstvennaya kommisya po elektrifikatsii Rossii*.
9. For a brief history of the energy sector in Tajikistan, see http://www.tajhydro.tj/ru/low-energy/history (accessed October 2, 2013).
10. This is an interesting period of economic development and energy sector growth, but little is known about the public response to this.
11. We do not mean to suggest privatization as a panacea here. Indeed, in other parts of the world, versions of privatization have brought about their own negative impact on citizens, and consequent protests (cf. also Barrett in this issue).
12. By November 2014, no sustainable solution had yet been found to provide natural gas to southern Kyrgyzstan.
13. Turkmenistan is an exception to this trend, providing free gas to its citizens. Armenia, also, has privatized the energy sector and energy tariffs have increased to meet market costs for electricity generation and distribution, and maintenance costs, as detailed by Strakes (in this issue).
14. Research tends to be compartmentalized according to energy sectors and type of resource: the literature on oil dominates.
15. Drawing from the operatic imagery from which the name *Nabucco* is derived, it is also a tale of persecution and a descent into madness, which also characterizes the way in which energy policies – official and clandestine – have created global markets based on insecurity, and markets that also fuel armed conflict. This is what is often captured through the tactics of the 'Great Game', where (imperialistic) superpowers are pitted against each other in resource- and merchandise-rich countries.
16. Since much remains to be explored about perceptions of energy and energy consumption in Central Asia, we see this issue as opening up a space of conversation to be continued.
17. Similar contestations are apparent in Alberta, Canada, between indigenous peoples, regions and national governments control of oil.

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