Center for International Development at Harvard University

Revitalizing the Albanian Electricity Sector

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PART I: Background - privatization and nationalization of ÇEZ

Introduction

The following case study concerns the failed privatization of an electricity distribution and retail company in a small developing country, and recommends measures to bring the system back to financial sustainability. The core issue underlying the failure of the privatization was the inability of the distribution company to reduce losses in the grid, due to theft and outdated infrastructure, in line with the regulator's targets, and subsequent frictions with the state. While the level of losses remains high, this study does not go into recommendations for reducing grid losses; instead, it assumes a reasonable path of loss reduction, given data from other successful loss reduction programs, and presents immediate and short-term reforms that the government can undertake to get the electricity sector out of intensive care, and into longer-term rehabilitation.

A brief history: Privatization

In 2009, Albania privatized its sole electricity distribution company. With the blessing and facilitation of the World Bank, the government sold 76 percent of its stake in OSSH to the Czech giant, ÇEZ for roughly €102 million. The International Finance Corporation (IFC) advised the government on the structure of the transaction and the bidding process. In addition, the IFC guaranteed €60 million of the transaction for ÇEZ. The guarantee would be activated should the government attempt to seize or appropriate ÇEZ's assets in Albania.

On paper, the acquisition seemed a perfect target for ÇEZ: the demand for electricity in Albania was projected to grow faster than the European average of 2-3 percent a year, and ÇEZ had a successful history of managing electricity distribution companies in Central and Eastern Europe.

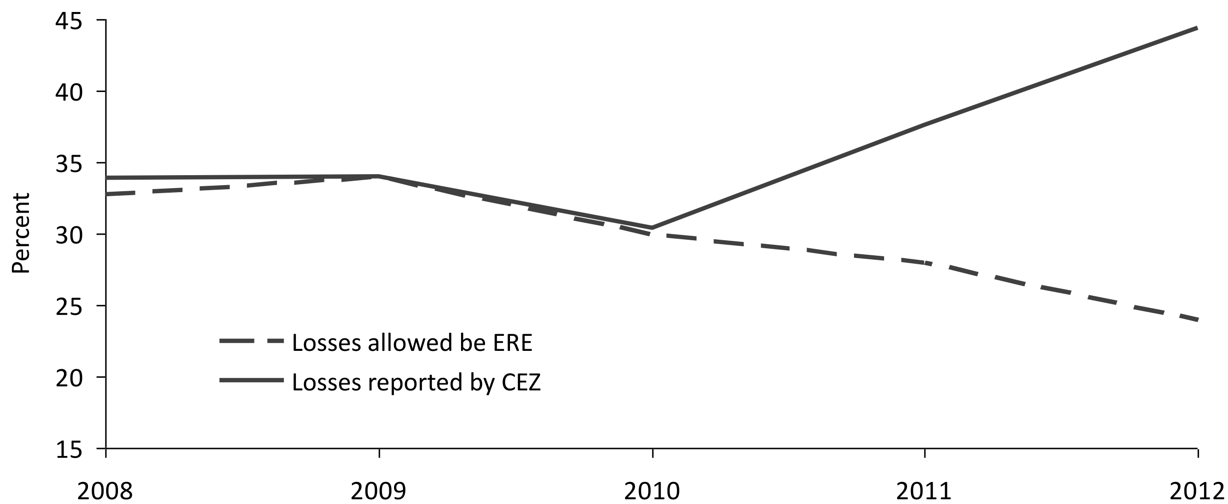
Martin Roman, Chairman of the Board and CEO of ÇEZ, said in a comment on the signing of the transaction: "For CEZ it is another step in consolidation of our position in the region of Southeastern Europe. From a long-term point of view analysts expect that the electricity consumption in Albania will grow by 5 % each year; a faster rate in the region is experienced only in Turkey where the CEZ Group operates as well." (CEZ, 2009) The transaction seemed like the definition of a win-win situation for both parties involved.

A brief history: The fallout

In 2013, the romance was well and truly over. For a couple of years, ÇEZ Albania successfully reduced losses in line with the targets set by the government (Figure 1). However, in 2011, a sequence of events soured the relationship between the government and ÇEZ Albania, eventually leading to the revocation of the company's distribution license. ÇEZ Albania took the government to court, and the case was eventually settled via arbitration with the government agreeing to pay €95 million over the course of four years, starting 2014.

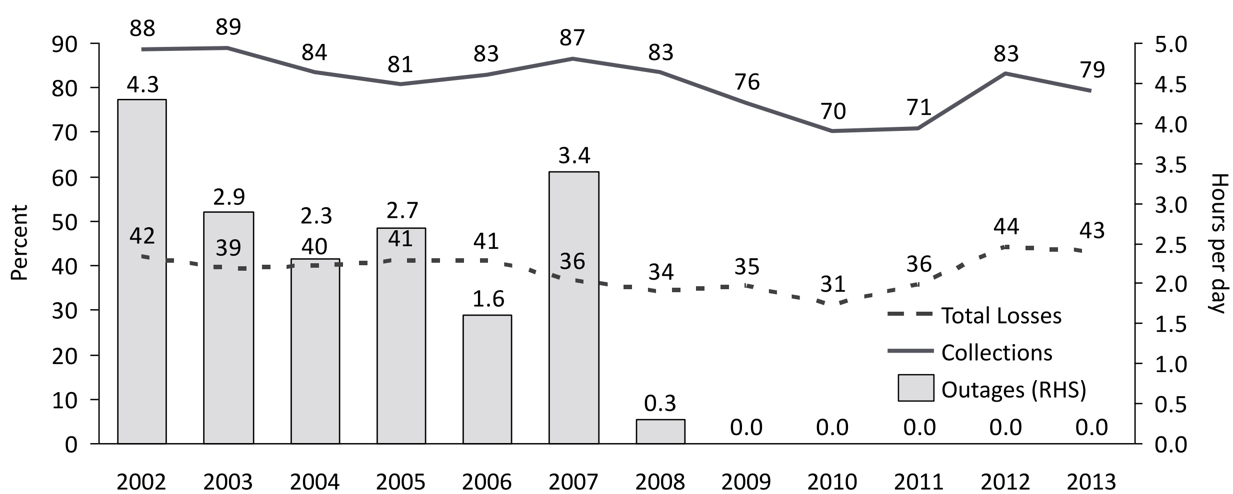
Meanwhile, technical and non-technical losses in distribution increased from 2011 onward. In effect, the level of losses in 2013 was higher than it was in 2009 when the company was initially privatized (Figure 2). On April 2014, ÇEZ Albania had negative net equity of USD 686 million, which represented almost five percent of Albania's GDP, and was financing itself by building up payables to the generation company, KESh. As a result, the generation company had bank overdrafts of over USD 200 million. A substantial proportion of the overdrafts were guaranteed by the government of Albania.

Figure 1: Allowed and actual losses



Source: ERE Annual Reports

Figure 2: Losses, Collection and Power outages



Source: ERE Annual Reports

In addition, the state owned generation company, which is also responsible for procuring and pooling electricity from other generators, was unable to pay independent power producers (IPPs) on time. As of May 2014, the company had built up approximately 8 months of payables to independent power producers. The IPPs, in turn, had started defaulting on their loans to banks. According to the largest bank by assets in Albania, the total amount owed by the IPPs was approximately 5 percent of their total assets, and the bank had an overall non-performing loan (NPL) ratio of around 27 percent. On the margin, even a small write-down of debt owed by the IPPs would have a large impact on the profitability of the banks.

In response, the banks called the overdrafts they had extended to KESh. Since the overdrafts were sovereign guaranteed, the banks were effectively looking for the government to provide liquidity for the power sector. This had clear, severe implications for the fiscal deficit for the country.

The original problem of high theft and losses had quickly morphed into a liquidity crisis across the entire sector, eventually threatening the broader economy through the financial system. Reducing theft requires investment in physical infrastructure and in working capital, which the companies did not have the liquidity for – presenting a classic catch-22 situation.

The rest of the case study is structured as follows: part II details how electricity and electricity markets work, and provides details about the structure of the electricity sector in Albania; part III then steps back to introduce the salient features of the original concession contract with ÇEZ and the reforms suggested by the World Bank; finally, part IV presents recommendations and projections for the electricity sector in Albania.

Part II: How electricity markets work

The science of electricity

The economics of the power sector are unique because of one simple characteristic: with current technologies, it is prohibitively expensive to store electricity in any meaningful amount. This implies that it is impossible to "go long" on power simply by buying, holding, and selling electricity. Therefore, any electricity that is produced must be transmitted and consumed (i.e. it cannot be stored). The demand for electricity is always at least equal to the supply. If demand is greater than supply, then some consumers are excluded from the market and do not receive electricity. Supply (adjusting for losses in the system) cannot be greater than demand: the laws of physics prohibit this.

Electricity consumption is measured in terms of units of energy, for example in kilowatt-hours (kWh). The measurement of electricity flows occurs at various points in the system: firstly, the output from electricity generators is measured; then, the input and output at various transformers and sub-stations is measured; and finally, the amount of electricity used by consumers is measured using meters installed right before the point of entry into the consumer's premises. Transformers and sub-stations may be considered nodes in a network. They pool and distribute electricity across different sectors in a grid, which is defined as the physical infrastructure that connects generators to consumers. Transformers and sub-stations serve an additional purpose: they usually decrease, but can also increase, the voltage of the electricity being carried across the power lines.

The amount of voltage across the wires is used as the yardstick to divide different types of physical infrastructure. In particular, high voltage infrastructure is called the transmission system and is categorized as the physical infrastructure associated with carrying electricity at above 115kV. The lower voltage infrastructure, also called the distribution system, is characterized as the infrastructure associated with carrying electricity below that threshold.

Electricity is generated at a power plant, "stepped up" to a high-voltage transmission line, carried to a transformer, "stepped down" to a medium-voltage distribution line, and then further stepped down to 230V in Albania (or 110V in the US) before it enters the consumer's premises. Carrying electricity at high voltage is more efficient since it reduces the amount of electricity lost as wires heat up. A second source of lost energy is through transformers or substations (i.e. stepping up or stepping down is associated with energy loss). Losses of these kinds that occur within the transmission and distribution infrastructure are called technical losses. Countries with good electricity infrastructure transmit and distribute electricity at high voltage until the electricity is stepped down just before entering the consumer's premises. In the UK, a typical substation, which supplies an entire neighborhood, would be rated at a minimum of 300kV, with the power being reduced to 230V just before it enters the consumers' premises. Thus, for Europe and the UK, technical losses are typically only around 1-2 percent of total demand.

In Albania, the distribution infrastructure consists of 35kV, 20kV, 10kV and 6kV power lines. The 6kV lines constitute the bulk of the distribution infrastructure, with 82 percent of consumers supplied through 6kV power lines. Given this fact, technical losses in Albania would be expected to be high. The measurement of technical losses is typically done by subtracting the total amount of energy passing through all substations (i.e. before the voltage is stepped down from 6kV to reach consumers) from the measurement carried out at the generation units. Unfortunately, the state of measurement infrastructure is so poor that it is impossible to calculate the exact amount of energy supplied to the substations. Instead, an estimate is obtained by the distribution company, which uses a program to simulate the losses given the voltage, material used in the wires, length of wires, etc. According to the estimate in 2013, technical losses in Albania were 16 percent.

What are non-technical losses?

The compensation to the distribution company is linked to both technical and non-technical losses. While technical losses have obvious infrastructure solutions, non-technical losses do not. In fact, high non-technical losses can lead to higher technical losses as illegal connections on power lines damage the equipment on the power grid.

So what are non-technical losses? In essence, these losses are a residual – the difference between the units dispatched and the units billed that cannot be explained by technical losses. It is normal for non-technical losses to be a small positive quantity, but larger quantities indicate the presence of theft. There exist different mechanisms for theft; some of which are the following:

1. An illegal wire is connected by the consumers (occasionally in connivance with the utility officials) to the grid. The wire bypasses the meter completely, and is usually visible to the naked eye. Such wires use a hook at the end to perch upon the power line, and are unsafe and unstable connections. This is perhaps the most common means of theft.
2. The meter is tampered with or removed completely by the consumer (usually in connivance with the utility officials) to provide a low reading. The tampered meter usually has to be replaced, and, if caught, the consumer must also pay a fine. This is not immediately visible and requires a more detailed investigation into the means of theft.
3. The meter reader is bribed by the consumer to report a lower reading. Once again, this is not immediately visible and requires secondary checks on the meter.

Non-technical losses, therefore, do not necessarily have infrastructure solutions. Some infrastructure-based solutions, including the bundling of cables with thicker insulation (which makes them less susceptible to illegal connections), increasing the elevation of power lines above ground, and installing tamper-proof meters, do decrease losses on the margin. However, the nature of non-technical losses in

Albania remains unknown. All three means of theft have been observed, and utility officials interviewed remained divided on the major means of theft.

Tackling non-technical losses

Not all non-technical losses are the same, and, therefore, non-technical losses do not have immediately obvious solutions. Furthermore, the responsibility for tackling non-technical losses is divided between the state and the utility. Finally, in most circumstances the *de jure* responsibility may be very different from the *de facto* division of responsibilities between the state and the utility company.

After numerous of privatizations in Latin America in the 1980s, there were a number of distribution companies that were owned and managed by Enersis, a Chilean company, which had successfully operated Chilectra Metropolitana, the company in charge of distribution in Santiago. Enersis then managed to successfully reduce losses in Argentina, Peru, Brazil and Colombia. A number of these turnarounds were in the face of significant social and political challenges and risks. In Latin America on the whole, private sector participation was associated with an average reduction of 11 percent in distribution losses, an increase in electricity sold per worker of 32 percent, and an increase in bill collection rate of 45 percent, within five or more years of privatization.

However, private sector participation in distribution companies was not a panacea for reducing non-technical losses. The caveat that comes along with the Latin America analysis is that these improvements were concentrated in utilities where "the institutional and regulatory framework provides the right incentives" (World Bank, 2009). In other words, a properly structured concession contract – one that divides the risk between the company and the government – and an effective enforcement mechanism are necessary conditions for the success of private sector participation in the power distribution business.

The range of solutions for non-technical losses is broad. Almost all successful turnarounds by private sector companies contain the following components:

1. Metering and billing. The first step in most successful privatizations has been the regularization of connections and the installations of "tamper-proof" meters. These meters make it very costly for the user to interfere with the reading on the meter, and any tampering could be detected by company officials. Secondly, companies usually rethink the incentives of the meter readers immediately after taking over. Public utilities often employ a significant amount of redundant labor as a form of providing political rents to constituents. Most private companies have to go through a potentially contentious downsizing of their labor force. Often, the company may outsource the reading of meters, or choose to install expensive infrastructure to monitor consumption remotely.
2. Enforcement of contracts. While the state may choose to withdraw completely from the power sector, the involvement of the state is paramount, especially in the early days following privatization. While metering and billing infrastructure is usually the first step undertaken by most private companies, the infrastructure may still get sabotaged without a credible commitment by the state to combat theft. While the company can expose theft, only the state can prosecute the theft of electricity. That means that all of the private sector's efforts to rein in theft may fail without the explicit support of all branches of government credibly committing to prosecute theft.

The economics of electricity

Prior to the unbundling reforms initiated by the World Bank in the 90s, most countries had state-owned companies that owned almost all parts of the electricity system. The final power tariff was both a political and an economic decision, with the state expected to use differential tariffs as a means to achieve broader social goals. The profitability of the sector, and the associated costs and transfer prices within the value chain, was a secondary concern. This changed with the unbundling of the power sector.

The electricity sector was once considered a natural monopoly – a belief that was challenged and modified by the movement toward unbundling. There are three primary parts of the electricity value chain: they are generation, transmission and distribution. The transmission part of the value chain was recognized as a natural monopoly, but generation and distribution could, at least theoretically, be unbundled.

Power generation units are large, illiquid infrastructure investments that produced a certain flow of power at a certain cost. The cost of production can, roughly, be split into the cost of fuel and the cost of depreciation of the asset. This is an important distinction because different types of generation units have different cost profiles. For instance, a thermal generation unit has a higher and more volatile per-unit fuel cost compared to a hydroelectric generation unit, but the latter has significantly higher capital cost. The security of supply (or, vice versa, the volatility of supply) from a given unit is also important; renewable sources of energy generally tend to be more volatile than their fossil fuel counterparts.

It is easy to see how the social returns of a generator may outweigh the private returns, particularly given the risk associated with investing in such a relatively illiquid asset. Therefore, in order to incentivize private sector to invest in the power sector, the state typically offers a long-term stable contract to purchase energy at a predictable price. This is known as the power purchase agreement, and effectively transfers the risk from the private sector to the state. With lower risk, the private sector is able to borrow from the banking system to finance the project. Typically, such investments are very highly leveraged, with banks occasionally asking for a sovereign guarantee backing the purchase agreement.

At this point, the nature of the market determines where the power generation unit can sell its power. While the state may set a certain price in the power purchase agreement, the generation unit may be free to sell to other players in the market. These could include large consumers of power, such as heavy industries, or to distribution companies directly. This underscores the importance of the power purchase agreement: a high price could lock the government into buying expensive electricity, while a low price may fail to transfer enough risk to the state to make the return on investment attractive enough to investors.

One extreme of this kind of market structure is the single-buyer model: the state buys electricity from all generation units (privately owned or otherwise) at a contracted price, and then sells electricity at a single price to all distribution companies in the country. The other extreme is one where the generation units find their own buyers without any guarantee by the state. Unsurprisingly, most countries adopt policies between the two extremes.

The transmission part of the value chain is responsible for linking generation centers (i.e. supply centers) with load centers (i.e. demand centers). Transmission infrastructure consists of high voltage lines and pylons (to minimize technical losses), and substations. Conventionally, transmission infrastructure is categorized as a natural monopoly—there are significant returns to scale, and there is little economic sense in having two parallel sets of transmission infrastructure. Therefore, most transmission operators (if privately owned) are compensated by a return on asset basis, with benchmarks for efficiencies approximated by the level of technical losses.

The distribution part of the value chain can be divided into two separate functions: infrastructure and retail. The infrastructure part of the distribution company owns the power lines, substations, transformers, etc. and seeks to generate enough of a return to maintain and upgrade its infrastructure regularly. Thus, the distribution infrastructure company charges a fee from any player that seeks to use its network. This may include a generation company looking to supply directly to a group of consumers, or the state looking to supply power to its own institutions. Since distribution infrastructure is usually a local monopoly, the state typically sets an upper limit on the distribution fee that may be charged by the owner of the infrastructure. The fee is also sometimes linked to the quality of the infrastructure, as measured by the quality of supply (i.e. the level of technical losses in the system).

The retail arm of the distribution part of the value chain buys and sells power. Depending on the market structure, the retailer could buy electricity directly from the single-buyer (the state) and sell to consumers across different distribution infrastructures, or buy electricity from generation units and sell to a single large consumer. The retailer does exactly what the name implies: it buys low in bulk and sells high to different units of consumers, with a margin in the middle. The bulk suppliers of electricity could either be the state (in the case of the single buyer model), or traders, who buy and sell large volumes of power. Typically, the margin of the retailer is capped as well, and linked to the retailer's ability to bill and collect from different categories of consumers. The retailer's efficiency is approximated by the level of non-technical losses in the distribution network.

Bridging the financial and technical aspects of the power market is the responsibility of a (typically either a national or regional) dispatcher. The dispatcher operates certain nodes of the power network, where power is bought and sold through a fairly complicated auction mechanism. Generation companies and traders, who are looking to sell, offer prices for certain units, while traders, retailers and others looking to buy power bid for units. This is in addition to long-term contracts that may be routed through such nodes. With each node having a certain capacity, these auctions may be held anywhere from 30 minutes to 15 days before the actual electricity gets physically transmitted. The dispatcher is the clearinghouse of the power market.

The presence of such sophisticated markets and clearing mechanisms require significant investments in dispatch, transmission and distribution technology. It is unsurprising, therefore, that most developing countries do not possess the technology required to operate such markets. In fact, the market for electricity is one of the most complex markets to construct and manage. Developing such a market for smaller countries, such as Albania, is extremely challenging.

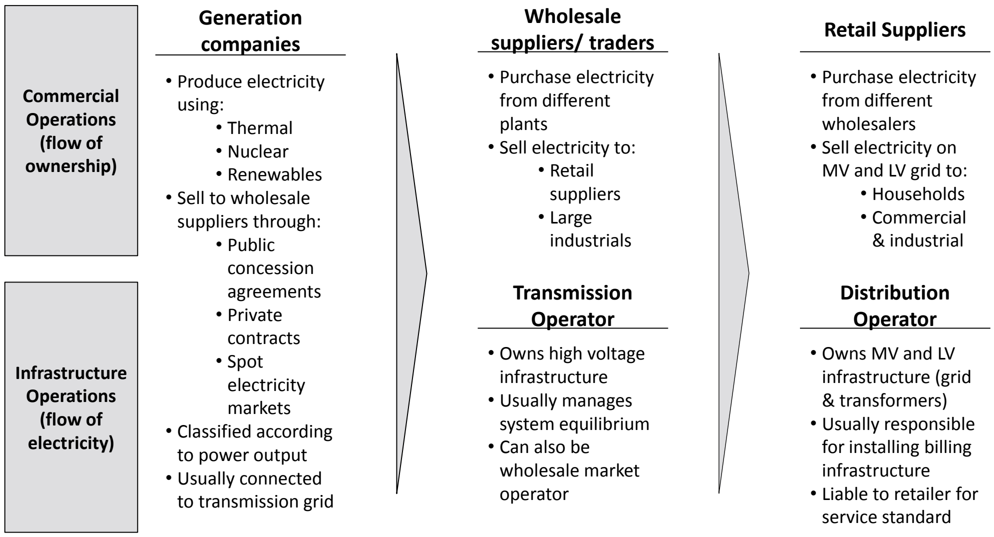
The market structure in Albania

Electricity markets are usually quite standardized, with generation, transmission and distribution infrastructure supplemented by wholesale and retail trading and supply activities. Similar to other small developing economies, the Albanian electricity market is dominated by the public sector, with large monopolies at each part of the value chain. Almost 80 percent of generation and nearly all of the other infrastructure and trading and supply activities are owned and controlled by the government. This is unusual for Europe, but typical for other small developing countries in Africa and Asia.

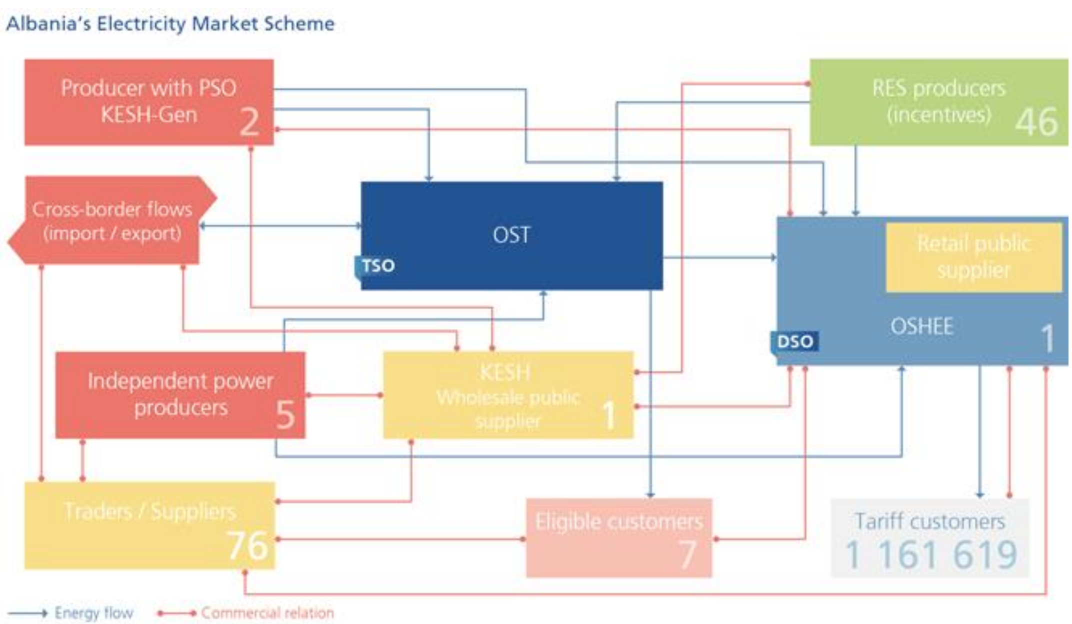
Figure 3 provides an illustration of how electricity markets are typically structured and how the market is structured in Albania. In greater detail, the situation in Albania is as follows:

1. Generation units owned by the public sector: These are owned by KESh, and include large hydroelectric power stations on the largest dams in the country. In addition, the state owns a combined-cycle gas turbine thermal power plant installed at the port city of Vlore.
2. Generation units owned by the private sector: These are small units owned by the private sector, which are almost exclusively hydroelectric. These units each have a concession contract and long-term power purchase agreement with the government of Albania.
3. The single-buyer: This is a part of KESh and is called the Wholesale Public Supplier (WPS) unit within KESh. It is responsible for buying electricity from the private sector, buying power from imports (if necessary), pooling it with the electricity produced by KESh's own generation units, and selling it to retailers.
4. The transmission and dispatch company: The state is the sole owner of the country's transmission infrastructure assets, through a company named TSO. The company also plays the role of dispatcher and charges a fee for the use of the transmission network.
5. The distribution infrastructure company: Formerly owned by the state, and later sold to ÇEZ, the distribution infrastructure assets were privately held until 2014. The distribution fee was linked to the company's ability to reduce technical losses.
6. The power retail company: A unit inside ÇEZ called the Retail Public Supplier (RPS) was responsible for buying electricity from the WPS, and importing electricity, and selling it to all consumers on the medium and low voltage grids in Albania. As a monopoly, its margins were capped and linked to its ability to reduce non-technical losses.
7. The consumers: consumers are segmented into three categories:
    a. High-voltage consumers: these are connected directly to high voltage (110kV) power lines and usually purchase a constant amount of power from private retailers.
    b. Medium-voltage consumers: these are connected to 6-10kV, 20kV or 35kV power lines and are currently supplied by ÇEZ. Typically, these consumers have lower losses than low-voltage customers due to lower energy waste at higher voltage levels and the difficulty of stealing electricity from higher voltage lines.
    c. Low-voltage consumers: these are connected to 220V lines and are composed of households and small commercial and industrial consumers. Although metering systems in Albania cannot accurately measure losses at this level of the grid, simulations predict that greater than 80 percent of losses are concentrated in this segment.
8. The regulator, ERE, was responsible for setting the following prices:
    a. The price at which generation units sold power to the WPS
    b. The price at which the WPS sold to the RPS
    c. The fee charged by TSO (the transmission service operator) for the use of its infrastructure
    d. The fee charged by DSO (the distribution service operator) for the use of its infrastructure
    e. The price at which the RPS could sell to different categories of consumers

Figure 3: Illustrative structure of electricity Market



Source: Own illustration



Source: Complied by the Energy Community Secretariat

How are tariffs set in Albania?

ERE sets all tariffs in Albania over a three-year horizon. Each year, however, the tariffs for next year are adjusted to account for the deviance from the ex-ante assumptions used to calculate the three-year tariff. As an example, generation tariffs for KESh were calculated for the 2011-13 period at the end of 2010, and adjustments in the tariff for 2012 were based on the deviation from the assumptions used to calculate the tariff for 2011.

Tariffs for infrastructure assets (generation, transmission and distribution) are based on returns on assets, with the rationale being to encourage investments in physical assets. These long-term investment plans are discussed with and monitored and approved by the regulator. Generation tariffs for publicly owned companies can be set abnormally low (compared to a market) because most of these generation assets have been fully depreciated on the government's books.

Tariffs for smaller privately owned power plants are linked to the import price, with a 10 percent premium on top of annual average import prices to act as an incentive for investment. This is a feed-in tariff that is only applicable to plants with less than 15 MW in capacity. In contrast, larger power plants negotiate contracts with the government on an individual basis. The difference between average import prices and the generation tariffs for the public generation company can be nearly 5-6 times, and the incentives to promote small hydropower plants have worked better than the government expected. The average price of electricity at the generation stage is, therefore, steadily increasing as more private capacity comes online at the higher tariff. While this is a concern for the government politically, the given structure of tariffs does not compromise the financial sustainability of the system, and is not studied in detail in this case study.

Tariffs for distribution and transmission infrastructure are linked to targets for losses (both technical and non-technical). In simple words, if the distribution company (or, analogously, the transmission company) has lower losses than the target, it gets to pocket all savings, but has to suffer financially if the target losses are not met.

Retail and wholesale tariffs also include a small margin (0.5 percent) for the performance of commercial activities. At the retail stage, the margin is benchmarked to the collection of bills. The margin is constant and does not change based on any other performance target of any of the companies.

With a cost-plus tariff structure at each level of the value chain, the system should, theoretically, be financially sustainable. However, tariffs are tied to performance targets determined by the regulator, and all unexpected changes in costs are only adjusted retroactively, leading to liquidity management challenges for the corporations. The tariff structure presents a classic catch-22 for all value chain agents: to improve their performance, the agents have to invest in infrastructure, which is usually unavailable given the liquidity constraints imposed by the tariff structure.

PART III: ÇEZ concession contract and World Bank recommendations

Features of ÇEZ concession contract

When ÇEZ bought the sole distribution company in Albania, the concession contract had the following salient features:

1. ÇEZ would reduce technical and non-technical losses below certain thresholds each year.
2. The company would undertake certain amounts of capital investments to improve electricity infrastructure each year.
3. ÇEZ would buy electricity from KESh at a rate determined by the regulator.
4. Tariff setting:
    a. The regulator would decide the average tariff which ÇEZ could charge under a cost-plus pricing mechanism, allowing for a pre-determined level of technical and non-technical losses.
    b. The allocation of the average tariff across customer segments would be decided by the regulator.
    c. The tariffs would be set for three years at a time, and any differences between estimates and actual tariffs would be adjusted in the following year.
5. ÇEZ would be responsible for importing the amount of electricity lost in its distribution infrastructure, and there would be no power outages.

While the years 2009 and 2010 went by smoothly, with ÇEZ hitting or being close to all its targets, there was a drought in 2011 that considerably reduced power generation by the hydroelectric plants owned by KESh. As a consequence, the wholesale public supplier (owned by the state) imported electricity to cover the shortfall. Since imported electricity was considerably more expensive than the electricity generated by hydroelectric dams in the country, the cost of purchasing power for ÇEZ increased considerably. Since the final tariff for ÇEZ could only be adjusted in 2012, this adversely impacted the liquidity position of the company. ÇEZ Albania received a soft loan from its parent company to keep the company liquid, but it scaled back on its investments.

However, at the end of 2011, the regulator did not increase ÇEZ's tariffs at all. In its ruling, the regulator said that "the numbers provided by the licensees' [ÇEZ] applications showed ambiguity that was proved by their final numbers, provided by them for 2012" (ERE Annual Report, 2012), and went on to list the differences between the data provided by ÇEZ and KESh. In response, ÇEZ took the government to court for breaching the terms of the concession contract. Furthermore, ÇEZ continued scaling back on its investments. In particular, as the company started prioritizing short-term cash flows over long-term profitability, it focused solely on areas with higher collection rates – leading to the odd phenomenon of increasing non-technical losses and increasing collection rates.

In parallel, the relationship between the state and ÇEZ soured on many other fronts. Amidst disputes about taxes payable and the amount ÇEZ owed to KESh, a particular point of contention was that a significant chunk of the problems with collection arose from municipalities. Receivables from the government could not be written off, and the management of ÇEZ was irked at the state defaulting on its power bills. The issue came to a head in 2012 when ÇEZ cut power supplies to the state-owned water companies, which resulted in the government taking ÇEZ to court for breach of contract.

Ultimately, ERE revoked ÇEZ's license in 2013. This led to ÇEZ taking the Albanian government to the International Court of Arbitration in response almost immediately.

Reforms proposed by World Bank

The resolution of the dispute came with Albania agreeing to pay €95 million to ÇEZ over 5 years. The government of Albania decided to manage the distribution company itself for the time being and to pay ÇEZ using cash flows generated from the power sector. At this point, total losses were at 43 percent of power consumption, 20 percent of consumers did not have functional meters, and consumers' tariffs had not changed since 2011.

In 2014, the World Bank initiated negotiations for a loan of roughly $200 million to invest in aerial bundled cables and armored feeder stations – solutions designed to make it more costly for consumers to steal electricity.

The central assumptions of the World Bank loan were the following:

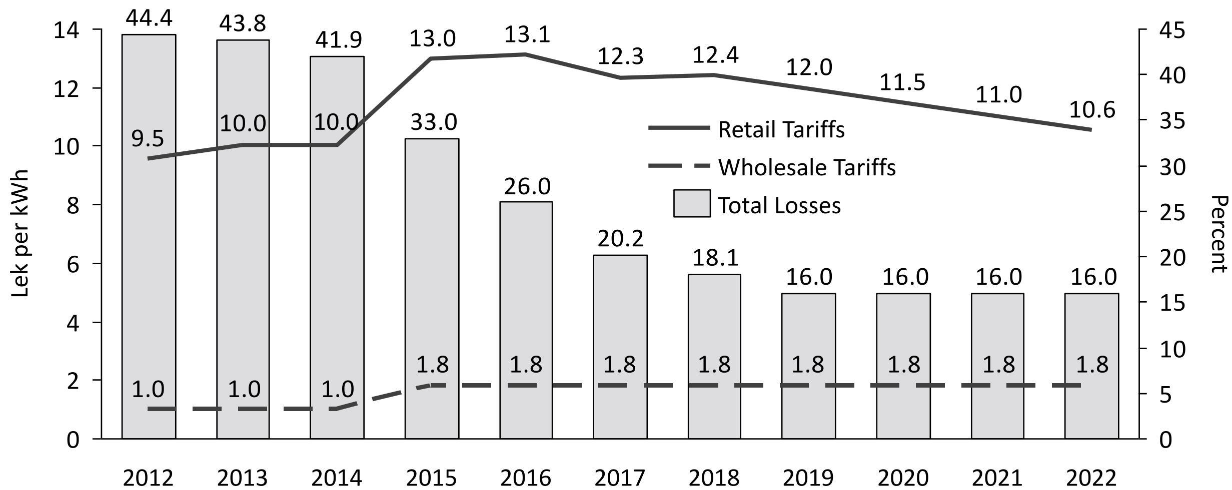
1. A reduction in total losses from 44 percent in 2013 to 26 percent in 2016, and further to 16 percent by 2019
2. No change in the average import price of power
3. No change in the exchange rate of the Albanian currency against major world currencies
4. A reduction in allowance for bad debts from 14 percent in 2013 to 4.85 percent in 2022
5. Settlement of $50 million owed by state institutions to the distribution company in 2014
6. The payment to ÇEZ would be made from the central budget, and not the energy sector
7. Agreements that imposed limits on leverage (ratio of debt to equity), and coverage ratio (proportion of cash flows to interest payments) of the distribution company

The assumptions and expected results of these reforms are included in Figures 4 and 5. The World Bank's assumptions regarding loss reduction were particularly aggressive. These, along with the drastic increase in retail tariffs, formed the basis for liquidity generation in the system. These reforms, if successful, would be unprecedented since there has been no other example of a country undergoing such a rapid reduction in losses.

Increasing tariffs and reducing losses concurrently is also politically and economically improbable since the incentives to steal power increase with rising tariffs, and the government does not possess enough political capital to increase tariffs before also reducing the theft problem. Popular perception in Albania is that tariffs only increase because the government is charging consumers for its inability to control the theft of electricity.

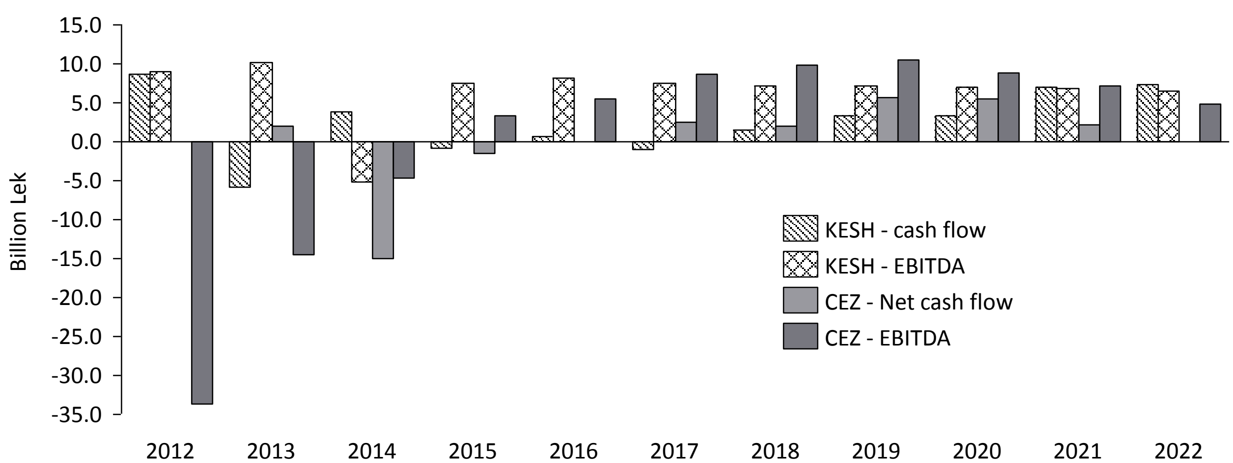
Therefore, given the political sensitivities associated with reforming tariffs and the unreasonable (and unachievable) targets for loss reduction, a different set of reforms need to be presented.

Figure 4: Tariffs and loss reduction proposed by World Bank



Source: ERE Annual Reports, World Bank calculations, author calculations

Figure 5: Cash flows and EBITDA for KESh and OSHEE/CEZ under World Bank plan



Source: World Bank calculations

Part IV: Projections and suggested reforms

Going forward

For the new Albanian government, energy presents perhaps the most serious challenge to the economy, and to its own popularity. Tariff increases are unpopular, but so are blackouts, and Albanians generally consider it unfair that they subsidize households (or state institutions) that steal electricity. The distribution company does not have the cash to invest in its own infrastructure to tackle theft, but any injection of liquidity into the company may be seen as a bailout for the company. With a series of unpopular decisions to make, the Albanian government needs to sequence its reforms to balance both its political capital and the country's economic situation.

Suggested reforms

The following sequence of **short-term** reforms is suggested to increase the profitability and liquidity available for the restructuring of the power sector in Albania:

i. Restructure the debts on ÇEZ balance sheets (now known as OSHEE) to allow the organization to raise structured debt from financial institutions and free cash flows for upgrading the distribution grid
ii. Raise average tariffs from ALL 9.5 per unit to ALL 10.5 per kwh
iii. Remove subsidized tariffs for households consuming less than 300 kWh per month
iv. Allow private retailers to sell power directly to consumers connected on the medium voltage grid
v. Restructure KESh as a pure generation company and transfer wholesale power purchasing to OSHEE

The rationale for these reforms is discussed in greater detail below. In addition, Figures 6 and 7 demonstrate the estimated impacts of these reforms.

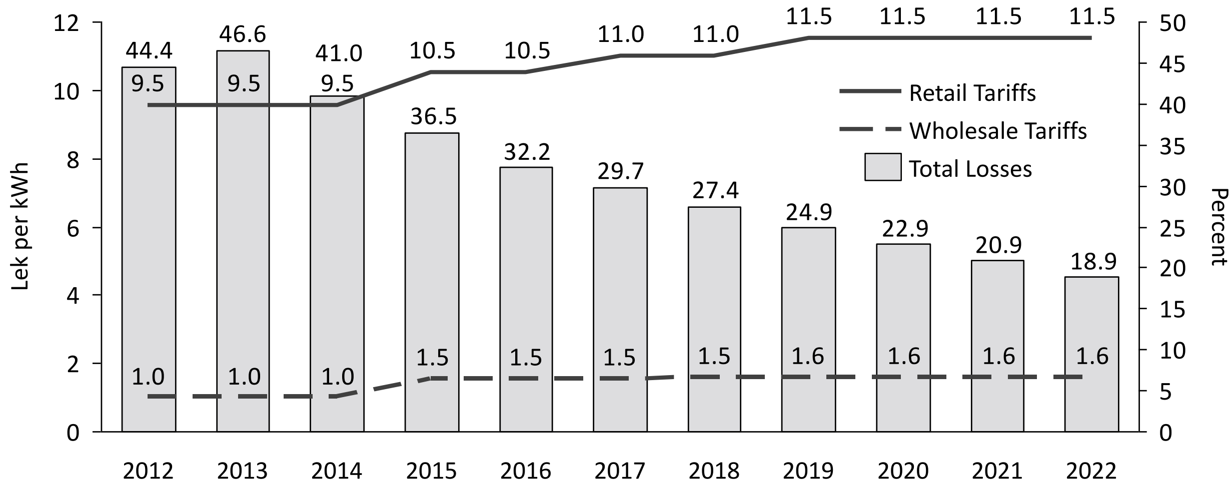
Restructure ÇEZ balance sheets

With negative net equity and a financing strategy that involves building up payables to its suppliers, ÇEZ would have been declared bankrupt had it been a private enterprise in a competitive market. Restructuring the balance sheets of ÇEZ would allow the government to, *de facto*, take the company through the bankruptcy process.

This recommendation is based on the creation of a corporation, which would raise capital by selling government-backed debt and use that money to finance ÇEZ. The financing instrument could range from equity to long-term debt at subsidized rates. While this would have no impact on the operational cash flows of the distribution company, it would free up cash flows for investments in infrastructure, and allow ÇEZ to access additional financing from financial institutions.

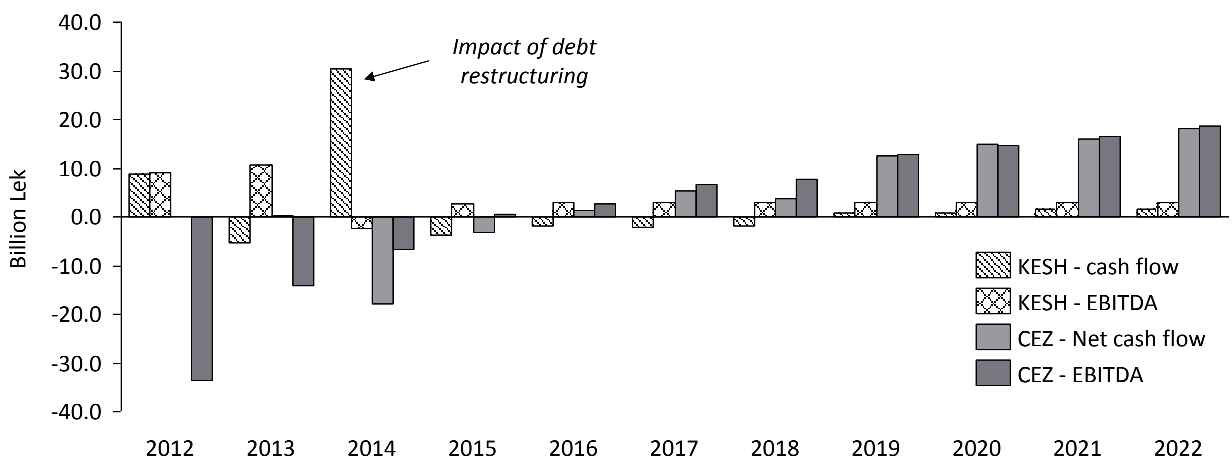
Finally, the central government needs to recognize the debts and deficits of the publicly owned corporation on a regular basis, instead of financing the corporation through payables to another publicly owned corporation, to provide a more accurate fiscal picture.

Figure 6: Proposed tariffs and loss reduction



Source: ERE Annual Reports, Author calculations

Figure 7: Cash flows and EBITDA for KESh and OSHEE/CEZ under Proposed Plan



Source: ERE Annual Reports, Author calculations

Raise average tariffs from ALL 9.5 per unit to ALL 10.5 per unit

For the distribution company to be profitable given its current level of distribution losses, tariffs need to increase to roughly ALL 13.5 per unit. Unfortunately, such a move is not only politically infeasible, but also assumes that the rate of collection and theft will not change in response to a drastic change in tariffs.

An increase in tariffs is, however, necessary. A tariff increase of ALL 1.00 per unit could sustain a distribution system with losses of roughly 20 percent on the distribution grid – an explicit target of ÇEZ over the next five years. The cash outflows in the interim period would have to be funded by the state.

Remove subsidized tariffs for households consuming less than 300 units per month

Currently, the first 300 units for *all* households are priced at ALL 7.7 per unit, and additional units are priced at ALL 13.5 per units. The state's rationale for these slabs is to allow poorer households to access electricity for basic lighting and heating needs. However, Albania also has an existing social protection program, which has identified households that receive cash transfers from the government. By removing the slabs, ÇEZ would increase its revenue, and eligible households could be compensated directly for 300 units of electricity. The subsidy will be more targeted since at this point *all* households receive a subsidy for the first 300 units consumed.

It is important to note here that another rationale for the slabs may be to discourage excess consumption of electricity, but that was not an explicit policy aim of the state in the rationale for these slabs.

Allow private retailers to sell power directly to medium voltage consumers

Allowing retailers access to the medium-voltage distribution grid would allow ÇEZ to collect distribution access fees from these retailers and reduce the billing and collection responsibilities of ÇEZ, since private retailers would then be responsible for billing and collection. This would free up more resources, which could then be dedicated to billing and collection for the rest of the system.

The liberalization of the medium-voltage consumer segment would also signal a broader shift towards a freer retail market, which is an important part of integrating Albania with the European Community.

Restructure KESh as a generation company and transfer wholesale power to OSHEE

Currently, the wholesale power supply (WPS) division within KESh is obligated to provide enough power to OSHEE to cover domestic demand. To that end, the WPS purchases power from KESh Generation (at an internal transfer price), from IPPs and smaller hydropower plants, and imports the rest. Power from the WPS is then sold to OSHEE by adding a margin. OSHEE then *also* imports as much power as necessary to cover losses within its distribution grid since blackouts are illegal.

This is a situation where imported power sold at the retail level contains two markups: the first markup is contained in the price at which the WPS sells to OSHEE, and the second is contained in retail OSHEE prices. To eliminate this redundancy, the responsibility to pool power from public generation, private generation and imports should lie within OSHEE.

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