ENERGY CHARTER SECRETARIAT

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Related documents:
CC 461, Mess 1096/13

DECISION OF THE ENERGY CHARTER CONFERENCE

Subject: Adoption by written procedure of the Recommendations of the In-depth Energy Efficiency Review of Tajikistan

By CC document 461, dated 15 October 2013, delegations were invited to approve the Recommendations of the In-depth Energy Efficiency Review of Tajikistan. As specified by Rule 20 of the Rules of Procedure (CC 53 corr. 2) concerning the adoption of decisions by correspondence, members of the Energy Charter Conference were informed that any delegation that wished to object to this proposal should notify the Secretariat of its position in writing not later than 6 November 2013.

Having received no objections within the specified time limit, on 6 November 2013 the Energy Charter Conference **welcomed** the report on the In-depth Energy Efficiency Review of Tajikistan and **endorsed** the recommendations made to the Government of Tajikistan.

Executive summary of the In-depth Energy Efficiency Review of Tajikistan is attached.

Keywords: In-depth review, Energy Efficiency, PEEREA, Tajikistan

Annex

IN-DEPTH REVIEW OF THE ENERGY EFFICIENCY POLICY OF TAJIKISTAN

Executive summary

Tajikistan is a landlocked mountainous country in Central Asia and occupies a territory of 143,000 km^2. About half of the country's territory is located above 3,000 m with mountains covering about 93% of the region's area. Lowland areas are situated in river valleys. Tajikistan's economy is steadily recovering after the 2009 slowdown. For 2012, the gross domestic product (GDP) was at 6.99 billion USD; compared to 2011, this represents a growth of 7.5%. In 2011, the growth rate was 7.4% compared to that in 2010. According to the World Bank (WB) , the country's business climate is improving. The Government has started to eliminate unnecessary procedures; and in the process, it has lowered minimum capital requirements, and established a one-stop shop. As a result of the reforms, Tajikistan was among the top 10 countries internationally in 2010 and 2012 that had considerably improved their business environment, as captured by the 'World Bank Group's Doing Business' report.

Tajikistan, however, continues to remain the poorest country in Europe and Central Asia (ECA) despite the reduction of poverty rates from 83% to 47% between 1999 and 2009. There is a risk of Reversing the benefits gains of poverty alleviation poses a risk;, as economic growth remains largely dependent on the external environment, particularly the pace of recovery in Russia, where up to 90 percent of labour migrants go, and the country's ability to access energy imports to overcome chronic shortages in winter.

Tajikistan relies almost entirely on hydropower for its electricity production – 97% of the generated electricity in 2010 comes from existing hydropower plants (HPP). Such reliance on hydropower makes the country vulnerable to variations in precipitation and climate change.

Moreover, because of Uzbekistan's withdraw from the Central Asian integrated power transmission network in 2009, Tajikistan cannot import electricity from that country. However, interconnections remain with Kyrgyzstan and Afghanistan. The total installed electricity production capacity in Tajikistan is 5,244 MW (2010), consisting of 5,211 MW HPPs and 318 thermal power plants (TPPs). The State electricity company Barki Tojik is responsible for generation, transmission, and distribution to the whole of Tajikistan, except in the Gorno-Badakhshan Autonomous Oblast (where the privately owned Pamir Energy operates most power facilities).

Tajikistan experiences significant electricity shortages in winter; these deficits are caused by a combination of high demand for heating in winter, loss of imports of electricity since 2009, cuts in natural gas imports and dependence on a hydropower system that has

limited capacity in the winter due to low river flows. Only one HPP – Nurek has a reservoir. All others are run-of-river plants that experience low flows in the winter. Nurek power plant, which represents more than 60% of its installed capacity, is the cornerstone of Tajikistan's power system.

A recent WB study estimates that the unmet (or "unserved") demand is at 2,700 GWh (2012) at consumer level. When the losses during transmission and distribution of electricity are considered, the deficit at the generation level amounts to about 3,100 GWh during winter compared to total winter supply requirement of 11,200 GWh, a gap of about 24%. According to a survey by the Tajikistan statistical agency, 90% of the households outside Dushanbe reported power cuts in 2007 – some cuts averaging 5.5 hours. One of the Government's priorities in the energy sector is to reduce the country's electricity deficit by installing new generating facilities and reducing technical losses.

Tajikistan's heat generation and distribution infrastructure, which was developed during the Soviet Period, is largely concentrated in Dushanbe (combined heat and power plants and several large district heating systems. Several other cities have district heating systems based on hot water supplied from heat-only-boiler (HOB) plants. Since the demise of the Soviet Union, there has been no investment in the district heating systems and current service quality is very poor. The main heat generators at Dushanbe have deteriorated and only 18 out of 181 HOB are in operation. As a result of the drastic decline in the levels of service in centralized heating systems, and encouraged by low prices, electricity has become the main source of space heating, complemented by gas (LPG) and coal where available.

Electricity accounts for almost 60% of the total energy consumption in Tajikistan. The local aluminium producer TALCO accounts for almost half the consumption. The households sector, 26%, is the second largest consumer, followed by the agricultural sector, which uses electricity mainly in the summer months for irrigation purposes. The Tajikistan Republic Energy Strategy aims to achieve energy independence and is recognised in many existing programs and documents, including the National Development Strategy for the period up to 2015 and the Poverty Reduction Strategy of the Republic of Tajikistan for 2010–2012. One of the key objectives for the energy sector is to provide reliable and high quality access to energy for the entire population, for industries and services, and to ensure the efficient use of energy in order to reduce poverty.

The energy policy of the Tajikistan Republic focuses on the improvement of power system integration. The laws and regulations governing the energy sector, which determine the energy independence and security of the country, include laws On Energy, On Energy Saving and the Concept of Development of Fuel and Energy Complex of the Republic of Tajikistan (2003–2015).

There is currently no real energy market in Tajikistan. The production, transmission and distribution of electricity are the responsibility of the State, represented by Barki Tojik – the only natural monopoly in this field. In 2011 a Government resolution recommended

Barki Tojik's unbundling in three phases in order to improve the company's financial performance and attract private investment.

Electricity tariffs for the Tajikistan population have a social dimension that are based on the average household's income. Domestic tariffs are cross-subsidised by other consumers; tariffs are set so as to cover the costs of procedures, repairs, maintenance, administration and depreciation; these tariffs are prescribed by the planning department of Barki Tojik and subject to approval by the Antimonopoly Committee of the Ministry of Economic Development and Trade. The Antimonopoly Committee regulates prices on electricity, natural gas and district heating. Current pricing strategies are not expected to change before 2015.

The Government has signed an agreement with the WB, whereby it will gradually start implementing the electricity tariff increase until 2025, as proposed by the WB.

A new Law on energy efficiency and energy saving was adopted on 19 september 2013. The law stipulates the legal and organisational framework for energy efficiency and provides for the introduction of energy efficiency materials, appliances and technologies. The law has provisions for introducing mandatory energy audits, establishing procurement procedures that incorporate criteria on energy efficiency, and requirements for energy use in buildings and household appliances, etc. The draft law also stipulates methods for the establishment of the National Fund for Renewable Energy Sources, Energy Saving and Energy Efficiency.

There is limited data on the energy efficiency potential in Tajikistan. Some studies have been done by the WB, the United Nations Development Programme (UNDP) and others; however, the database is incomplete and the estimated energy savings are of a preliminary nature. The WB has assessed various detailed options and scenarios[4] to address the country's electricity challenges, including improvement of end-use energy efficiency, tariff management and fuel switch. All these measures could reduce winter demand by 3,250 GWh by 2020, i.e. by 20% vs. business as usual. The implementation of all proposed measures would cost 280 million USD for the period 2013–2020 and most of the measures, with the exception of solar water heaters, are estimated as economically attractive by the Bank.

Tajikistan possesses a significant renewable energy resource potential. The largest is hydropower, which is the most cost-efficient, and is estimated at three and a half times the current electricity consumption of Central Asia. Solar, wind, biomass and geothermal energy can provide for almost 10% of the energy needs of the country. Currently, Tajikistan uses less than 4% of its technical and economical hydropower potential and less than 1% of the potential of other types of renewable energy. About 10% of the country's population live in remote mountainous off-grid areas (in valleys with small rivers and streams), where off-grid renewable energy solutions make economic sense. In 2007, the Government adopted the Special Program for Renewable Energy Sources Use in Tajikistan for 2007–2015. The program introduced a set of measures to create a production base and infrastructure for wider use of renewable sources of energy: solar,

wind, biomass, small hydro and geothermal. The purpose of the program was to develop and deploy technologies for electricity and heating generation from renewable energy sources; to raise living standards; to reduce the use of non-commercial biomass fossil fuels; to train qualified personnel; to develop remote, off-grid areas; and to contribute to environmental protection.

Recommendations

The Tajikistan Government recognises the importance and the challenges of ensuring energy security in the country. However, it is still necessary to develop firm legislative framework and to integrate basic energy efficiency principles in the economic and social development of the country.

Institutional arrangements for energy efficiency are now at a developmental stage. The Ministry of Energy and Industry (MEI) and the Ministry of Economic Development and Trade (MEDT) are responsible for most facets of the energy sector in Tajikistan.

However, no department or agency is mandated with the overall coordination of the energy efficiency policy in the country. The overall progress of reform in the energy sector has been slow and as of today there is no real energy market in the country. The unbundling of Barki Tojik is expected to start soon and legislation is to be developed and adopted to establish an independent regulator in the electricity sector and to reform the tariffs.

Currently, Government financing is not available for energy efficiency activities and projects in Tajikistan. In the past, a number of projects were financed by donors, mainly to support power loss reduction and improve electricity metering. The establishment of the National Energy Efficiency Fund envisaged in the new Law on energy efficiency and energy saving energy; furthermore, this framework is expected to be capitalised with the support of donors and international financial institutions as well as with national budget allocations.

General recommendations

- Energy efficiency has gained much attention by Tajikistan Government in recent time and the same level of attention should be maintained to energy efficiency as one of the solutions to ensure energy security in the country.
- The Energy challenges and possible solutions to overcome those challenges are well documented and the Government should rapidly and resolutely proceed along the roadmap set out in the various studies prepared by donors.
- Most of the Government attention should focus on short-term challenges (such as covering winter energy demand). Addressing those short term challenges is a prerequisite for long term economic development and embarking on large scale electricity export projects, for which economical, political and financial conditions are not given yet.

Institutional and legal framework

- There is a need of an institution to be created or mandated to lead, in close coordination with other government institutions, the development of all legislation, regulations and sectoral programmes on energy efficiency and renewable energy as well as to coordinate their proper implementation, enforcement and monitoring.
- The government should pursue Efforts to increase governance, transparency and accountability in all institutions and other players involved in the energy sector
- Government should finalise the new law on energy efficiency as soon as possible. Enacting laws is an important first step in building the regulatory framework in the energy sector, However much effort must go into drafting by-laws, codes and technical regulations, as well as building institutions who have the authority to oversee, monitor and sanction the implementation of the laws and regulations.

Awareness raising and information provision

- An Awareness raising programme should be launched targeting all layers of society, including local Governments, industry, SMEs, investors, decision makers in Government institutions.
- Professional training courses for energy efficiency and renewables specialists need to be launched to ensure that best practices are disseminated and the country's hydro potential is optimally used. The training courses should be sanctioned by a certification system of international standard.

Financing energy efficiency

- The Government should proceed with the establishment of a national Energy Efficiency and Renewables/Rural Energy Fund
- The Government should promote awareness in the banking sector on energy efficiency and rural energy projects, including micro financing

Market and tariff restructuring

- The government should enforce payment discipline among all energy users. impacts on the most vulnerable should be buffered by social policies.
- The government should increase tariffs to levels that ensure coverage of operational and capital cost; these increases should be differentiated so as to incentivize demand restraint in winter and shelter the vulnerable.
- The government should seek to reap increased transparency and improved management performance from the planned restructuring of Barki Tojik

Sectoral energy efficiency

Electricity and heat generation and distribution

- The Government should be applauded for their efforts to deploy meters and reduce transmission and distribution losses and should continue the current efforts.
- The Government has clearly identified the challenge related to difficulty of covering of winter demand as it is largely imputable to demand for heating. The proposed solutions to mitigate uncovered winter demand have been examined by international organsiations and the Government should tackle these options by examining each option's cost benefit ratio and by closely coordinating with donors to raise the necessary financing. Some of the options, requiring less upfront investment (such as small solar water heaters) may be financed by the fund.
- The Government should ensure highest possible efficiency for new generation capacity End-use energy efficiency
- Government, through its procurement, should demonstrate a systematic preference for most efficient building practices, energy using appliances, transport means. Municipal plans to introduce efficient street lighting with donor aid should be encouraged.
- The Government should develop building codes for newly constructed buildings as well as ensure its proper enforcement
- In rural areas The Government should stimulate the systematic use of efficient techniques based on local expertise
- The Government should encourage awareness among industry and SMEs (financing energy audits)
- The Government should speedily implement efficiency enhancement measures at TALCO
- The Government is to be applauded by banning incandescent light bulbs from the market and restricting imports of inefficient, old vehicles. A similar approach could be considered for other energy using products by introducing energy performance standards that will stop highly inefficient energy using products from the market. Options to support vulnerable households could be combined with subsidized tariffs for electricity.