

SERBIA'S POLICY ON RURAL ELECTRIFICATION – RURAL ELECTRIFICATION POLICY AND ITS IMPACT ON MINORITIES

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Introduction

Based on an empirical and regulatory analysis and recognizing the importance of reducing energy poverty to empower minorities, this research aims to examine how and if Serbia's energy policy supports energy self-sufficiency of rural areas. Almost 43% of the Serbian population lives in rural areasⁱ and one of the most potential serious problems in the country's EU accession negotiations is the existing gap between urban and rural areas.³ A lot of households in remote regions are not connected to the public grid. In Serbia, the electrification rate is higher in urban areas than in rural areas and lower in poorer households.^{ii, iii}

In a first step, this study proposes a model that shows that from the perspective of welfare economics an isolated grid supply that primarily uses renewable energies proves to very often be a financially preferable option for small remote regions in Serbia even at short distances. Historic research data on the distribution of refugees indicate that the biggest part of minorities live in rural areas. In a second step, this paper emphasizes this view from the perspective of minorities⁴ in rural areas who are generally affected by several dimensions of poverty. Rural electrification can be subsumed under the Millennium goals^{iv} and the paper argues that energy self-sufficiency in remote regions in Serbia could empower minorities to facilitate their access to education, employment and eradicate poverty and improve health. As a consequence, the electrification of remote regions may be an essential step to increase social stability by narrowing the gap between urban and rural areas, which until today complicates national political decision making processes. Also, political interests may lead to a preference of development in urban areas, as the government in power is likely to support the areas that are politically more in favor. The third step of this paper is to investigate if and how the Serbian state supports the establishment of isolated grids and energy self-sufficient regions. It gives an insight into policy measures and regulations of the Serbian government in the field of energy self-sufficiency and screens EU legislation.

Methods

Extension of an existing model to compare alternatives of rural electrification

Extension of a model developed in 2012 to compare monetizable costs for supplying model regions with an isolated grid over a 30-year life-cycle and for extending the public grid in Croatia^v, using country specific factors (Serbia). The model

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³ This is illustrated by a household budget analysis on the availability of durables in households.

⁴ Including marginal groups excluded for social, economic and/or political reasons.

distinguishes between various distances and includes different scenarios of line connection, inflation and price developments. The model uses empirically determined load profiles for model regions in Serbia.

Explorative analysis of the policy framework in Serbia and recommendations

The study investigates the topic through an explorative analysis. It argues why preference should be given to the establishment of isolated grid systems in rural areas of Serbia instead of to the extension of the existing electricity network. Emphasis is put on the topic of self-sufficiency of remote regions and their potential influence on living standards and the perspective of minorities. This includes an analysis of Serbia's energy policy framework over the last years. To give an outlook to Serbia's access to the European Union, EU legislation is screened. In particular the paper assesses if and how the European Union sets targets to supply households in remote regions with electricity.

Results and discussion

Research shows that isolated grid solutions prove to be a preferable option for the electrification of remote regions in Serbia. This also applies to small distances. It is shown that a national support of isolated grid solutions could increase the quality of life of the rural population, endow the integration of minorities, help to implement the strategy for rural development in Serbia and foster an increase of RES towards the 2020 goals. Nevertheless, the current policy framework in Serbia neither supports rural electrification nor energy self-sufficient regions. Even though the latest amendments of legislation show that a mind change in Serbia is not expected, efforts have been taken to remove administrative and legislative obstacles (e.g. licenses).^{vi} On the one hand a chance to the minorities should be given to build and operate a self-dependent network. On the other hand it should be incumbent on the government to take decisions in the field of network connection. At the end, a summary of recommendations for action for the Serbian state is given.

ⁱ The World Bank, Percentage of urban population by countries using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects (15/11/2013): <http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS/countries>.

ⁱⁱ Statistical Office of the Republic of Serbia, The World Bank, Department for International Development (DFID): Living Standards Measurement Study, Serbia 2002-2007; *Statistical Office of the Republic of Serbia*; (NY).

ⁱⁱⁱ Vukmirovic, D.: Household budget survey 2011: Statistical Office of the Republic of Serbia; ISSN 0354-3641; *Bulletin 5555*; Belgrade; 2011.

^{iv} United Nations, Millenium Goals, Factsheets (10/11/2013): <http://www.un.org/millenniumgoals>.

^v Protic, S., Pasicko, R. Carrington D.; Electrification of remote regions in Croatia – The potential of welfare improvement by isolated grids; *SDEWES Conference*, Dubrovnik, 2013.

^{vi} The Energy Law, 2011 Serbia, *Official Gazette of the Republic of Serbia* No. 57/11, 80/11-amendment, 93/12 and 124/12.