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A Case Study: Solar Rural Electrification Assessment

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***Abstract*—Energy demand around the globe is on the rise with widening supply and demand gap, specifically in developing countries. It is noticed that rural areas of the developing countries are more affected by energy scarcity. Pakistan is also coping energy crises with serious issues pertaining to energy access and availability faced by the rural communities. Balochistan, is the largest province of the country by area, which is also the richest province for its mineral and energy resources. A greater share of the provincial population is residing in a rural area with almost no sign of electricity. Balochistan has one of the highest potentials of solar energy in the regions, which is very viable for rural communities. Energy electricity demand estimate for the Garok village, district Khuzdar, Balochistan has been assessed based on a questionnaire survey. Statistical Package for Social Sciences (SPSS) version 16.0 has been used to analyze survey results. The results of this study suggest that the village has limited electricity access from the grid for only a few households along facing load-shedding of more than 16 hours. These on-grid consumers have an average load of about 0.33 KW/household, the major source for heating, lighting and cooking is domestic fuel (Kerosene). To ensure reliable and sustainable access to electricity to the village, the solar home system would add socio-economic development and improve environmental conditions by reducing the household pollution consequential from consumption of outdated cradles of energy. It is concluded, a household with on-grid access to electricity and those without on-grid access would benefit greatly from solar energy potentials and shall meet most of the energy requirements.**

***Keywords*—energy consumption, energy efficient, renewable energy**