1. **"Analyzing Pakistan’s Renewable Energy Potential: A Review of the Country’s Energy Policy, Its Challenges, and Recommendations"**

**Link:** [**Paper**](https://www.mdpi.com/2071-1050/14/23/16123#:~:text=Pakistan's%20energy%20gap%20is%20between,to%20support%20its%20economic%20growth.)

This paper highlights Pakistan's substantial renewable energy potential, especially in wind and solar, which could help resolve the country's electricity deficit. Pakistan currently faces a significant shortfall, estimated between 5,000 and 8,000 MW, largely due to its dependence on imported fossil fuels. By expanding renewable sources, the country could reduce carbon emissions and meet its growing energy demand. The paper discusses policy challenges and suggests measures to encourage renewable adoption, estimating that 1,710 MW of wind power and additional solar power could be immediately integrated into the energy grid to alleviate power shortages.

2. **World Bank Report on Pakistan’s Renewable Energy Needs**:

Link: [Paper](https://www.worldbank.org/en/news/press-release/2020/11/09/renewable-energy-is-the-future-for-pakistans-power-system-a-new-world-bank-study)

This report recommends that Pakistan increase solar and wind power to at least 30% of its energy mix by 2030. With solar and wind resources, Pakistan has the potential to reduce electricity costs, enhance energy security, and minimize environmental damage from fossil fuel consumption. The report suggests that scaling up renewable sources could save Pakistan up to $5 billion annually by reducing reliance on imported fuels.

3. **"Renewable Energy in Pakistan: Policy Strengths, Challenges & the Path Forward"**:

Link: [Paper](https://ethz.ch/content/dam/ethz/special-interest/mtec/cepe/cepe-dam/documents/education/selected-term-papers/Yazdanie.pdf)

This review examines Pakistan’s renewable energy policy since 2006, which promotes wind and solar projects with incentives like tax exemptions and net metering for small-scale projects. The policy aims to diversify energy sources and reduce the carbon footprint. Despite the high initial costs of renewable installations, the policy supports renewables as a long-term solution to address the country’s reliance on fossil fuels and improve rural electrification and social welfare.

These sources collectively provide strong support for Pakistan's transition to renewable energy, emphasizing the potential benefits in addressing the energy shortfall and reducing environmental impact. Let me know if you’d like more details on any specific area within these studies.