ENERGY AND CLIMATE
PANORAMA

Status of
LNG IN PAKISTAN
A Case Study

ABOUT US

Who we are

We are a dedicated team of researchers and experts who recognize the urgent need for action in addressing climate resilience and energy transition in Pakistan. Our mission is to develop and implement effective policies for cleaner, renewable energy sources like solar and wind, aligning with Pakistan's 2030 goal of 30% renewable energy in its electricity mix. As a multidisciplinary team, we leverage expertise in three key disciplines of study—Energy Systems Engineering, Thermal Energy Engineering, and Electrical Power Engineering—to drive our mission forward. We are united by a shared vision of creating a sustainable and resilient future for Pakistan, where cleaner energy sources play a pivotal role in reducing the nation's vulnerability to climate-related challenges.

What we do

We conduct in-depth, evidence-based research to analyze and improve energy policies in Pakistan. Our focus is on advancing renewable energy solutions and engaging stakeholders to ensure effective policy implementation. Our methodology involves a critical examination of current energy policies to pinpoint areas of improvement and formulate strategies for the widespread adoption of renewable energy sources across various levels.

In line with our commitment to fostering sustainable practices, we have established a fellowship program as part of our broader initiatives that aims to facilitate evidence-based research for promoting energy transition in Pakistan. Through research studies, surveys, and forecasting, we plan to assess various aspects of energy transition, including the adoption of renewable energy technologies and their impact on climate change. Our approach involves active engagement with stakeholders to address their concerns and facilitate the effective implementation of policies, fostering the growth of renewable energy manufacturing and marketing facilities.

CONTACT US

Industry Liaison & Outreach Office

Bilal Mehmood Bhutta
Phone: +92-51-90855274
Fax: +92-51-90851302
Email: ilo@uspcase.nust.edu.pk
USPCAS-E Building, National University of Sciences & Technology, H-12, Islamabad.

PRIMARY CONTRIBUTORS

DR. SEHAR SHAKIR
PRINCIPAL INVERSTIGATOR
Assistant Professor

DR. SANA YAQUB
CO-PRINCIPAL INVERSTIGATOR
Assistant Professor

ABDUL REHMAN
RESEARCH ASSISTANT
MS in Thermal Energy Engineering

LAYOUT DESIGN

SAAD NADEEM
RESEARCH ASSISTANT
MS in Energy Systems Engineering

SANA MEHMOOD
RESEARCH ASSISTANT
MS in Energy Systems Engineering

Table Of Content

Table Of Content

Exceutive Summary

This study explores the significant shift in the global and Pakistan energy landscape towards Liquefied Natural Gas (LNG) as a key energy source. Previously, Natural gas trade relied on extensive pipeline networks due to its low density. However, advancements in purification, liquefaction, and regasification technologies have made LNG an increasingly attractive and cost-effective means of transportation. The emergence of cost-effective combined cycle generation turbine (CCGT) plants has enabled nations like Pakistan, India, China, and Turkey to shift towards gas-fired power generation, promoting worldwide natural gas production and consumption. Environmental concerns and the approaches for cleaner energy sources have further boosted the appeal of LNG, due to its low sulfur content, reduced CO2 emissions, and increased energy generation. This aligns with the global pursuit of renewable energy options, positioning LNG as a favored energy source. Additionally, the LNG supply chain offers simpler solutions, including simpler liquefaction and regasification plants, making it scalable and adaptable to a wide range of customers.

In Pakistan, LNG imports commenced in year 2015, marking a significant transformation in the country's energy landscape. Imports have steadily increased, accounting for a substantial portion of total gas demand. Two key regasification stations, Engro Elengy's offshore facility and Pakistan LNG Terminal Limited (PLTL), have played vital roles in enhancing Pakistan's LNG infrastructure.The report also highlights ongoing and upcoming LNG infrastructure projects in Pakistan, which are essential to meet the country's growing energy needs. Regulatory bodies like the Oil and Gas Regulatory Authority (OGRA) look after various aspects of the LNG sector, including allocation, pricing, and safety compliance. The importation of LNG is crucial to address shortages and support electricity generation, particularly for Combined Cycle Power Plants (CPPs). Despite these efforts, Pakistan faces challenges in bridging the gap between domestic gas production and demand. The report emphasizes the need for an integrated approach to ensure energy security and reduce gas shortages. The government's pursuit of LNG imports is crucial, but it must also address issues with provinces to ensure the domestic availability of LNG. The current shortage of natural gas has had significant economic and societal impacts, underscoring the importance of securing the country's energy supply.

NUST
Defining futures

OUR PARTNERS

Pakistan Renewable Energy Coalition
Together for a Renewables Powered Pakistan

SDPI
Sustainable Development Policy Institute

RENEWABLES FIRST

PRIED
Policy Research Institute
for Equitable Development

Indus Consortium
Humanitarian Environment and
Development Initiatives

PAKISTAN
ENVIRONMENT TRUST

Private Power & Infrastructure Board
Ministry of Energy (Power Division)
Government of Pakistan

https://uspcase.nust.edu.pk

ilo@uspcase.nust.edu.pk

USPCAS-E Building, NUST Sector H-12,
Islamabad, 44000 Pakistan