SDG 7 - Leading the Charge: UST's Holistic Approach to Affordable and Clean Energy

The University of Santo Tomas (UST) has continuously demonstrated its commitment to advancing the United Nations Sustainable Development Goal (SDG) 7, Affordable and Clean Energy. Through groundbreaking research, innovative campus projects, strategic partnerships, and community initiatives, UST has positioned itself as a leader in promoting sustainable and equitable energy solutions. This report highlights the university's comprehensive efforts, illustrating its multi-pronged approach to achieving SDG 7 while fostering a culture of innovation, environmental stewardship, and community engagement.

1. **Fostering Campus Energy Sustainability**

   UST's energy management initiatives represent a cornerstone of its efforts to meet SDG 7. The university's **Energy Forum** in May 2024 underscored its commitment to energy efficiency, featuring programs such as **POWERWISE**, **Luntiang Tomasino**, and **GRT-76**, a solar energy initiative. The forum highlighted UST's ongoing solar panel installations on campus, with plans for expansion to other facilities. Tools like the **Energy Online Dashboard** enable precise monitoring and prediction of energy usage, ensuring that efficiency gains are measurable and actionable.

   The identification of high-consumption areas across UST's 27 Energy Accounting Centers (EACs) emphasized the need for tailored solutions, such as addressing "phantom load" and mitigating heat-related consumption challenges. These initiatives reflect the university's proactive stance on operational sustainability, reducing its carbon footprint while achieving cost savings.

2. **Empowering Underserved Communities through Renewable Energy**

   In line with its mission to extend sustainability efforts beyond its campus, UST spearheaded community-focused projects such as **GALILEEWANAG** and **Liwanag ng Pag-ibig**. These initiatives provide solar-powered lighting solutions to underserved areas, fostering energy independence and environmental awareness in marginalized communities.

   By equipping residents with skills in maintenance and implementation, these projects ensure long-term sustainability while addressing immediate energy inequities. This reflects UST's holistic approach to sustainability, blending technology transfer, capacity building, and community upliftment.

3. **Research Excellence in Green Energy and Circular Economy**

   UST has earned recognition for its pioneering research in renewable energy and sustainable systems. Prof. Michael Francis D. Benjamin's award-winning work on **integrated biorefineries** exemplifies the university's dedication to advancing the circular economy. By converting agricultural waste into biofuels, chemicals, and

renewable energy, his research addresses energy security, poverty alleviation, and environmental sustainability.

Similarly, Prof. Maria Natalia Roxas-Dimaano's expertise in **biochar and thermal energy storage** has garnered national and international accolades. Her work, which explores renewable energy innovations, exemplifies UST's leadership in creating practical and scalable green technologies.

At the global level, the university's achievements at the 2023 International Chemistry Congress highlighted the innovative use of biochar in energy storage and catalysis. These projects reaffirm UST's contributions to advancing green energy technologies on the international stage.

4. **Strategic Partnerships for Sustainable Impact**

UST's collaboration with the Climate Change Commission (CCC) underscores its dedication to addressing climate challenges through strategic partnerships. The six-year Cooperation Agreement signed in October 2023 aims to enhance climate-related research, policy development, and community resilience. Initiatives under this partnership focus on biodiversity, aquaculture, and renewable energy, aligning closely with the principles of SDG 7 and Laudato Sí.

Additionally, UST secured a P16.5 million grant for its **Siquijor Island Conservation and Restoration** project, which integrates renewable energy solutions into ecotourism development. This initiative exemplifies the university's ability to blend environmental conservation with sustainable energy applications.

5. **Cultivating Innovation through Student Engagement**

The **Hack-a-Thom Hackathon**, held in November 2023, provided a platform for Thomasian students to devise innovative solutions to sustainability challenges, including renewable energy systems. Projects like **Charging Point** by Team Thoma5eekers envisioned solar-powered charging hubs for bike-friendly campuses, showcasing the university's efforts to foster creative and practical approaches to clean energy.

This hackathon, supported by industry leaders like Accenture, not only empowered students but also aligned their innovations with the university's broader sustainability goals.

6. **Knowledge Sharing and Advocacy**

UST's role in knowledge dissemination was highlighted during the **Nuclear Science Symposium** in May 2023. By exploring the potential of nuclear energy as a sustainable power source, the university created a platform for discussions on energy

diversification. These dialogues reinforced UST’s commitment to fostering collaboration among academic institutions, industries, and policymakers.