KARADENİZ TEKNİK ÜNİVERSİTESİ
KARADENİZ TECHNICAL UNIVERSITY
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KARADENIZ TECHNICAL UNIVERSITY
- CLEAN ENERGY TECHNOLOGY USE, RESEARCH, DEVELOPMENT AND SUPPORT POLICY -

PURPOSE OF THE POLICY

The purpose of this policy is to ensure the establishment of renewable energy systems to reduce and decarbonize KTU's energy consumption, to support research and development (R&D) activities in the field of clean energy technologies and to lay the groundwork for the commercialization of the technologies produced. Policy directs and contributes to the practices to be carried out within the scope of energy efficiency, environmental awareness and innovation principles.

RELEVANCE OF THE POLICY

Relevant Sustainable Development Goals (SDG) Criteria: This policy is primarily related to the following goals from the United Nations Sustainable Development Goals:

- SDG 7: Affordable and Clean Energy
- SDG 9: Industry, Innovation and Infrastructure
- SDG 13: Climate Action
- SDG 17: Partnerships for the Goals

Relevant Metrics:

- THE Impact Rankings
- UI GreenMetric

SCOPE OF POLICY

The policy covers all campuses and units affiliated to KTU (Kanuni, Sürmene Marine Sciences, Maçka and other campuses). The university's buildings, laboratories, Farabi Hospital, dormitories, social facilities, practice hotels and research sites are included in the policy. All kinds of technological investments and R&D activities related to energy production, storage and use are carried out in accordance with the provisions of this policy.

BASIC PRINCIPLES AND LEGAL BASES

- **Energy Efficiency and Renewability:** By preparing the Energy Management Unit directive, energy efficiency projects are supported in accordance with the Energy Efficiency Law No. 5627, the use of renewable energy sources is encouraged and compliance with relevant legislation is ensured.
- **Scientific Research and Innovation:** Educates students and researchers in the field of renewable energy technologies. Support is provided for the research and studies of students and researchers.
- **Student and Community Participation**: The establishment and work of student clubs are supported. Develop applied projects on clean energy technologies of student societies. Mentoring support is provided for participation in national and international competitions.
- **Scientific Activities and Awareness: Relevant** technology topics are discussed at events organized within the university. These events raise awareness about clean energy and provide opportunities for collaboration with industry representatives.
- **Benefiting from National and International Funds:** Through the Technology Transfer Office (TTM), national and international calls are monitored, and these programs provide funding for the university's clean energy research projects from programs that support the technologies and system solutions required for the green transition.

RESPONSIBILITIES AND ROLES

- **Rector's Office and Senate:** Responsible for policy approval, resource allocation, and monitoring performance indicators.

- **Energy Management Unit (coordinated with YİTDB):** Measures the energy consumption of the university, plans renewable energy investments, fulfills the duties within the scope of the Energy Efficiency Law and carries out energy efficiency projects.
- **Renewable Energy Resources/Technologies & Related Research Centers:** Conducts research projects on clean energy technologies; develops curriculum and laboratory infrastructure, prepares and conducts projects for programs such as TÜBİTAK, Horizon Europe and CETPartnership.
- **Technology Transfer Office (TTM):** Follows national and international funds; provides guidance in project applications, manages technology commercialization, licensing and entrepreneurship processes.
- **Student Clubs:** Develops applications such as electric and hydrogen vehicle production, solar and wind energy projects; participates in competitions and organizes awareness activities on campus.
- **Environmental Problems Application and Research Center (UYGAR):** Provides integration between energy, water and waste management policies; makes carbon footprint calculations. Supports related projects.
- **Staff and Students: Have** awareness of energy efficiency and renewable energy use; participate in energy conservation and feedback mechanisms.

APPLICATION STEPS

1. **Current Situation Analysis and Target Setting:** Energy consumption data is collected on all campuses; renewable energy potential (solar, wind, biomass, geothermal) of electricity, heating and cooling systems is analyzed.
2. **Planning of Renewable Energy Investments:** Pilot projects are developed for the use of energies such as solar, wind, etc. Feasibility studies are carried out for the biogas production of organic waste (cafeteria residues, green area waste). By installing battery storage and intelligent energy management systems, energy supply security and flexibility are enhanced; It is integrated with electric vehicle charging stations.
3. **Research and Development Activities:** Research and projects carried out by relevant disciplines are developed. Students are encouraged to participate in energy technology competitions. Patent applications and the establishment of spin-off companies are encouraged through TTM.
4. **Training and Awareness Programs:** Courses on renewable energy sources and technologies are added to undergraduate/graduate programs; continuing education programs and certificate courses are organized for staff and students; Events such as Energy Days are organized.
5. **Funds and Collaborations:** Applications are made to TÜBİTAK, World Bank, KOSGEB and EU programs (Horizon Europe, CETPartnership, etc.); cooperation agreements are signed with the public and private sectors; international joint projects are carried out.
6. **Energy Efficiency Practices:** Energy-saving lighting, thermal insulation, automation systems, and energy-saving devices are used in buildings; unnecessary energy use is prevented through awareness campaigns.
7. **Monitoring, Measurement and Reporting:** A performance monitoring system is established for renewable energy production, consumption, greenhouse gas emissions and energy efficiency projects; data is reported annually and evaluated according to policy objectives.

PERFORMANCE INDICATORS

Indicator	Goal	Source of Verification
Share of renewable energy in campus energy consumption	Meeting 30% of total consumption from renewable sources by 2030	Environmental Problems UYGAR reports
Solar PV installed capacity (kW)	Installed capacity to reach at least 5,000 kW by 2030	YİTDB and Energy Management Unit records
Number of clean energy R&D projects completed	Completion of at least 10 projects by 2030	Research unit and TTM reports

Indicator	Goal	Source of Verification
Number of awards/participations received by the Energy Technologies Society in competitions	At least 5 prizes/entries by 2030	Energy Technologies Society reports
Number of training and awareness events	At least 10 training/activity programs per year	TTM and Continuing Education Center records
Campus carbon emissions (tonnes CO_2-eq)	15% reduction by 2030	Sustainability Coordinatorship reports

AUDIT AND REPORTING

- **Monitoring Frequency:** Performance indicators are evaluated annually; data on the relevant indicators are regularly monitored by the relevant units every year. The changes in the values in the indicators during the year are determined and necessary measures are taken in a timely manner.
- **Reporting Frequency: Annual** data are recorded in KTU Sustainability Reports within six months following the end of the relevant year and shared with the public on the university's website. Four-year data is compiled to form an input for the next strategic planning period. In addition, the relevant data obtained each year is reported to UI GreenMetric and other international sustainability indices.
- **External Verification:** Participation in national and international certification programs is provided to certify the performance of the university within the framework of the relevant indicators. The participation program and decision are taken by the senate. The implementation and effects of the policy are verified through audits carried out by independent organizations.
- **Revision Conditions:** In case 60% of the targeted values of the determined performance indicators cannot be reached for two consecutive years or in case of changes in national/international legislation; the policy is reviewed by the implementing units, revision proposals are prepared, and the policy is submitted to the senate for approval again.

EFFECTIVE DATE

This policy comes into effect from the date it is approved by the KTU Senate. University units are obliged to comply with and implement the provisions of the policy.