NAZARBAYEV UNIVERSITY

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Nazarbayev University

NU: Path to Sustainability Development

AGENDA:

1. Campus environmental performance
2. Education for Sustainable Development
3. Research for Sustainable Development
4. Building national sustainability network among local universities and institutions
5. Participation in international networks
6. Contribution to the City resilience and State’s response to Climate Change

1. Campus environmental performance

The University should inspire others to the Sustainable Future by its own example

- Climate change & energy *(mitigation of GHG emissions, energy efficiency, renewable energy, sustainable transport)*
- Waste *(waste reducing, recycling programs)*
- Food *(on campus horticulture, energy efficient greenhouse, urban agriculture)*
- Water resources *(water use efficiency, water upcycling)*
- Landscape *(greening the campus)*
- Biodiversity *(local biodiversity maintenance)*
- Campus as a test-bed *(Sustainability Living Lab CREATIVITY Program)*
- Green Procurement

GREEN CAMPUS

NAZARBAYEV UNIVERSITY

1. Campus performance

- **Climate change & Energy**

- Development of the NU Carbon Management Plan : GHG emissions mitigation plan for Scope 1,2
- Energy dashboard for heat & electricity
- Campus as a test-bed for research findings and innovation
- Technology transfer

- **Waste**

- Development of the NU Waste Management Program
- Organic waste composting
- Trainings and masterclasses
- Support of innovative projects on plastic recycling, waste reduction, composting, other.

- **Food**

- Support of the campus horticulture by residents
- Construction of Energy-efficient greenhouse
- Urban agriculture projects
- SLL projects (e.g. Vegan meat)

1. Campus performance

- **Water resources**

- Provision of free access to drinking water on campus
- Water efficiency projects
- Snow and rainwater conservation projects

- **Campus landscape**

- Development of the Campus Landscaping program
- Tree planting activities
- NU Atrium, indoor green spaces
- Development of gardens

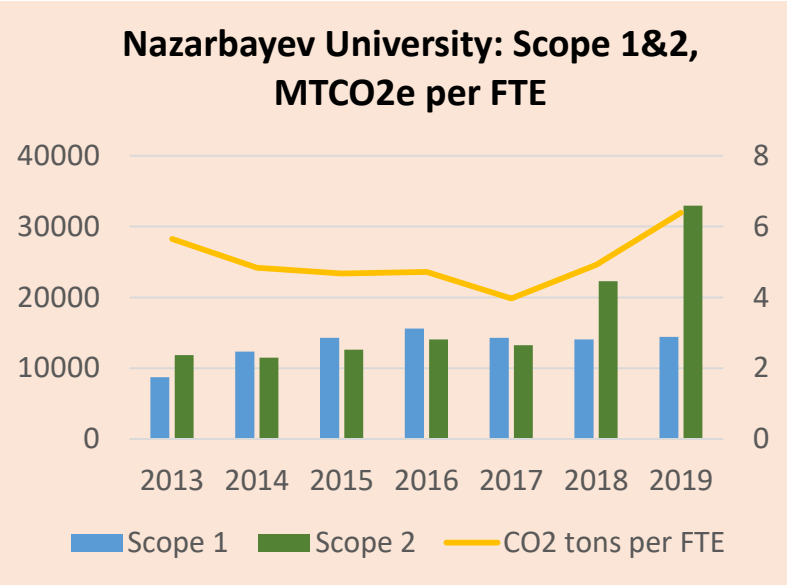
- **Biodiversity**

- NU Campus is a host for local biodiversity
- Development of guideline on local biodiversity
- Biodiversity conservation plan

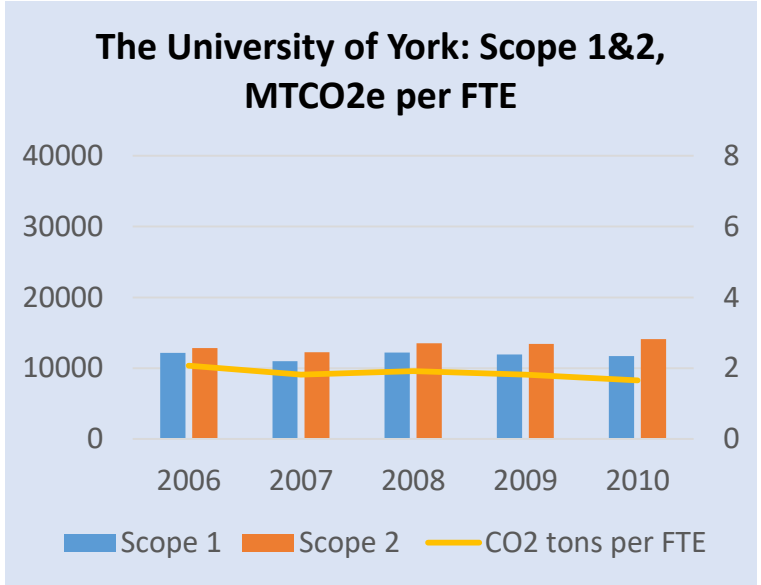
- **Green Procurement**

- General guidelines for sustainable procurement
- Using life cycle cost tools
- Policies for packaging and reuse of goods

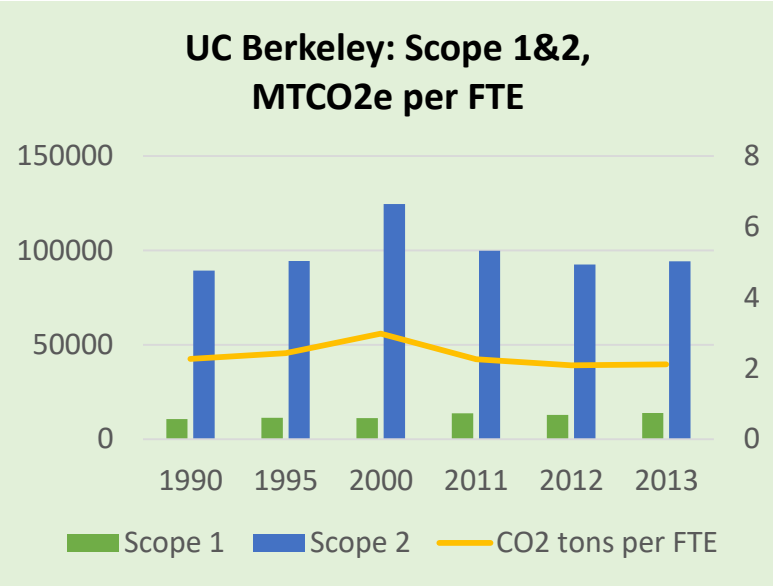
Comparison



Total FTE: ~7,400 (2019)
Campus territory: 100 ha
Focus:
Efficient energy use (->reduce energy use)
Alternative low/zero carbon sources of energy



Total FTE: ~ 15,600 (2010)
Campus territory: ~ 200 ha
Goal: **reduce Scope 1&2 emissions by 48% by 2020**
Actions: Improving the energy performance of buildings: smart building technology options, replacement and retrofitting of luminaries, i.e. LED lamps, replace boilers with more efficient ones, etc. new low carbon sources of energy: wind turbines, biomass boilers



Total FTE: ~ 51,000 (2013)
Campus territory: ~ 2,700 ha
Goal: **Carbon neutrality for Scope 1&2 sources by 2025, for Scope 3 by 2050**
Actions: Installing solar panels with a focus on new buildings and those under renovation; substituting carbon-free biogas for natural gas use; finding additional opportunities for constructing and renovating to maximize energy savings

View Building Data

What is the energy use intensity of your building?

The circle around the buildings represents the energy use intensity, and the color the building category.

Energy use Intensity = annual energy use (kWh) / building square area (m2)

Choose the building by name:

(All)

Choose the building type:

- (All)
- Community
- Office
- Research
- Residential
- Schools

Green your mind
Office of Green Campus and environmental development, Nazarbayev University

NU Green Society (NU students)

Sustainability week:

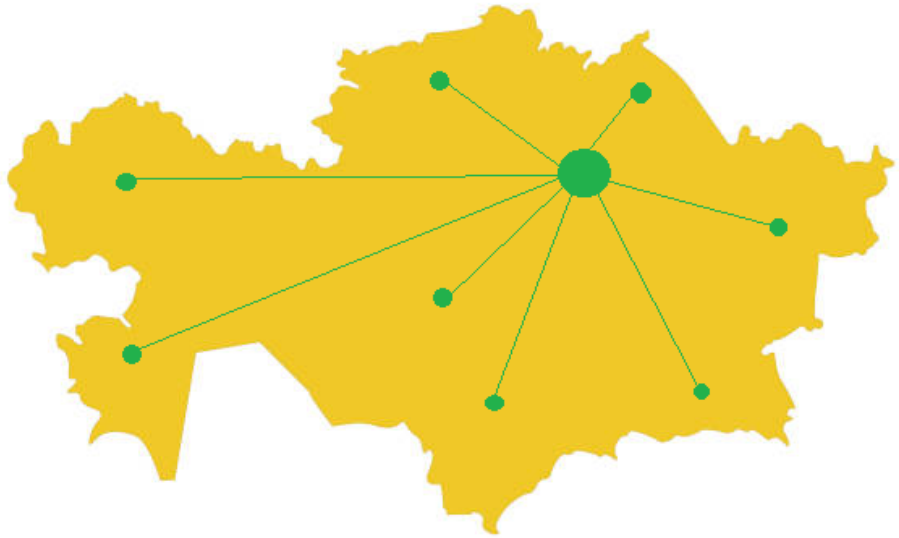
- Eco-talks
- Movie screening
- Vegan food fair
- Art exhibitions
- Quests/contests/games

Other activities:

- Eco-trips
- Master-classes
- Social network
- Outreach

Building national network among local universities and institutions

- Sharing the Green Campus program's experience
- Building **Sustainability Living Lab network** among local universities: experience sharing, consultations; - **12 universities**
- Joint conferences, workshops and fieldtrips (Climate Week, Climate Talks, others)
- Joint **research collaboration** on local environmental issues
- Engaging to the NU's **innovative events** (Climate Launchpad KZ, Climathon Nur-Sultan)
- **Students' network**: NU Green Society



Sustainability Living Lab

Sustainability Living Lab program intends to promote sustainability within the University, where

- campus becomes as a **test-bed**;
- students and faculty realize '**green' research and innovative projects**;

- financial support
- access to campus facilities
- university engineering services
- Consultations from experts

Opportunities for projects:

- Incubation
- Acceleration
- Climate Launchpad

SLL Creativity projects

Precious plastic

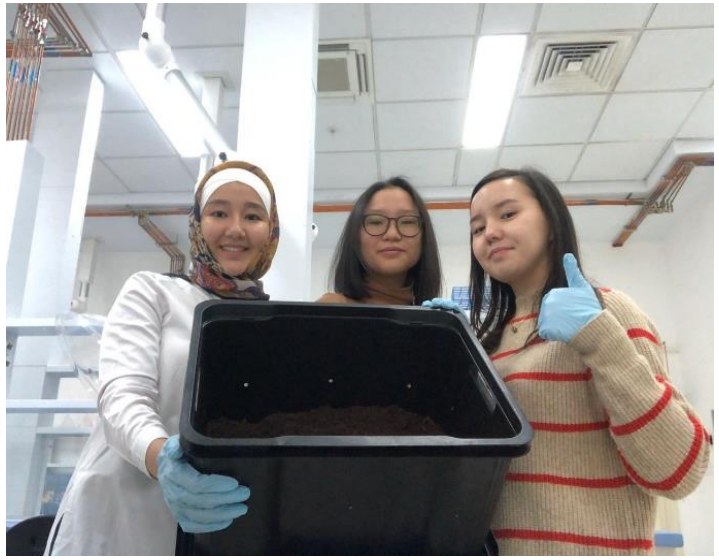
Precious plastic is the worldwide movement which is aimed to promote plastic recycling. It helps to turn plastic waste into valuable things.

Biodiesel from cooking oil

On campus Biodiesel production from used cooking oil for NU transportation service

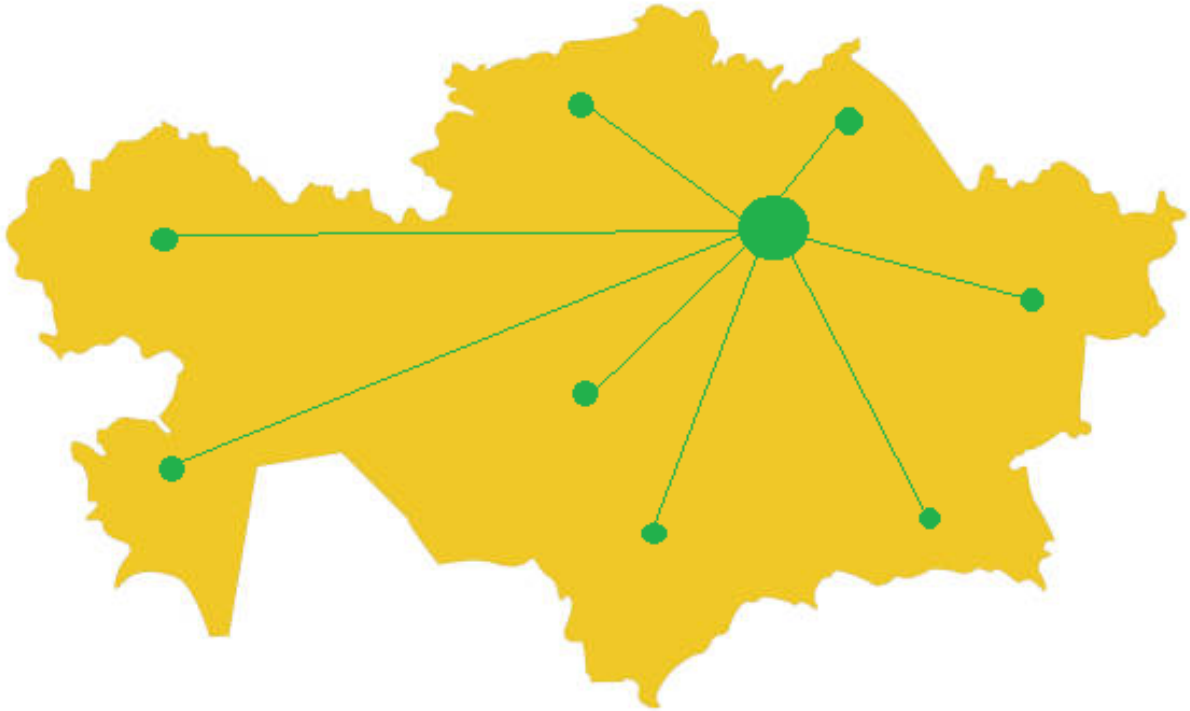
Vermicomposting

- Composting of organic food waste from university canteens and cafes
- Growing of greens and vegetables on that compost



SLL Network

- Nazarbayev University
- Kozybayev University
- Makhambet Utemissov University
- Caspian University
- Ualikhanov University
- Suleyman Demirel University
- Shakarim University
- Zhubanov University
- Buketov University
- Auezov University
- AUPET (АУЭС)
- Korkyt Ata University



SLL Outreach projects

Campus landscaping project
Kozybayev University

Urban Agriculture
Dosmukhamedov University

Smart Plasticomat in AUPET

Cycling project
Ualikhanov University

Tile Glass project
Buketov University

Campus energy efficiency
in AUPET

Plastic Recycling in
Buketov University

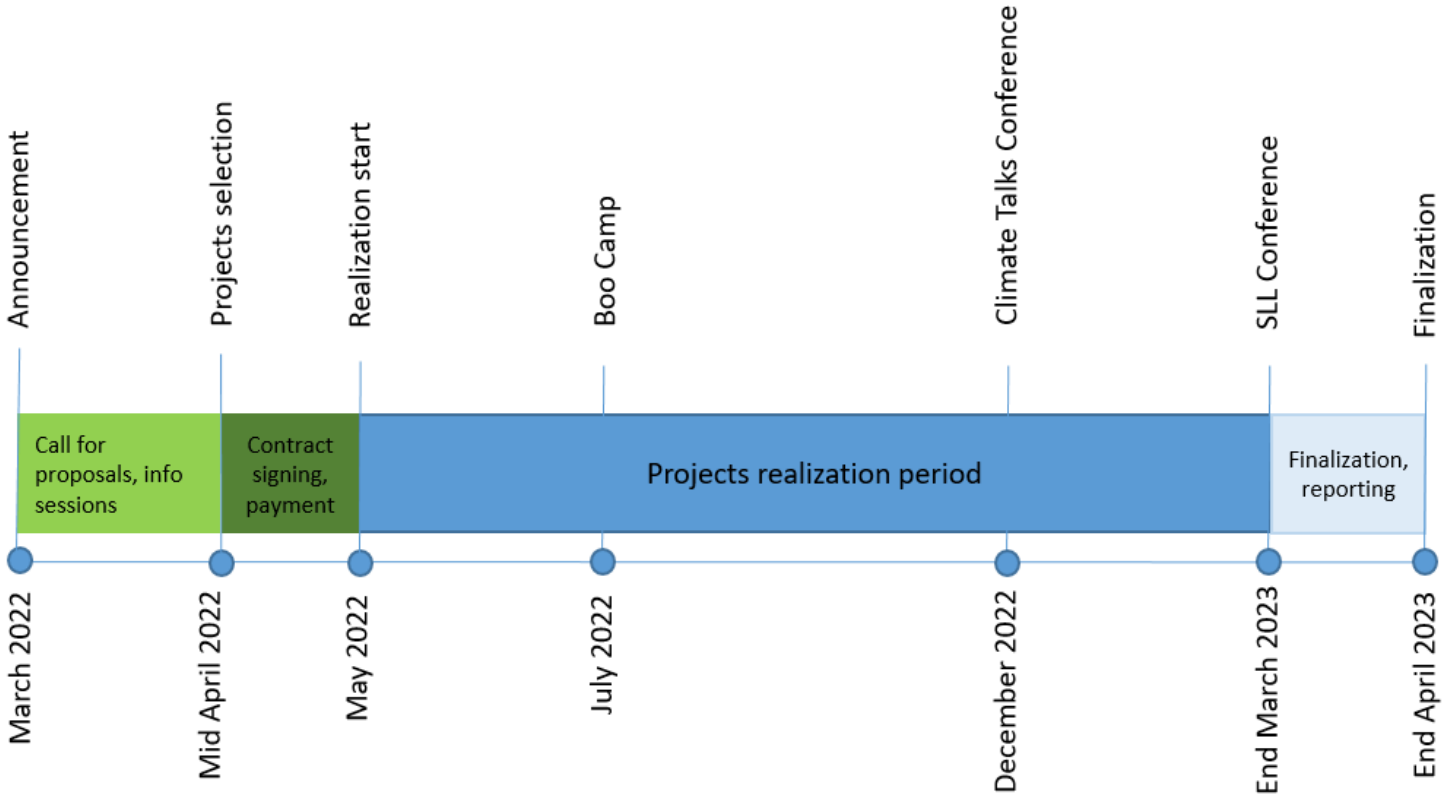
Electricity from living plants
Auezov University

Eco Gazebo in
Auezov University

Waste sorting in SDU

Bikeparking in
Korkyt Ata University

Milestones of SLL program



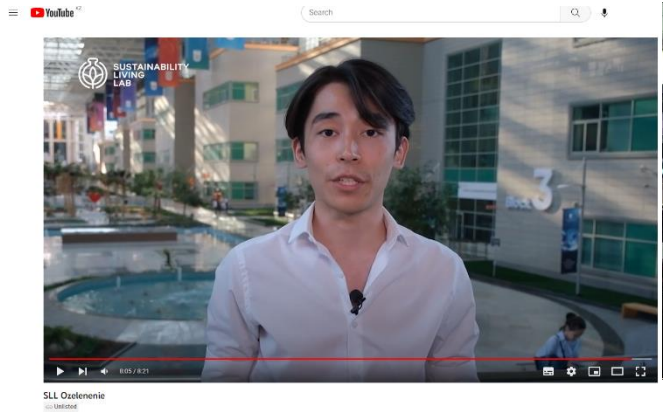
- SLL Creativity for NU
- SLL Outreach for regional universities
- SLL Education for ALL
- Boot Camp
- SLL branding and website
- SLL Conference

SLL Bootcamp

SLL is not only about projects. It is also about fun, learning and networking.
In July 2022, the SLL Boot Camp training session was organized for program participants from ten universities and guests lived in NU campus for three days.
The Boot Camp contained a training session on sustainable development, meeting
with SLL alumni, campus tour, eco games and many more.
Participants also shared their experience on implementation of projects and made useful acquaintances and new friends.

Master classes with the participation of SLL program participants

The purpose of these workshops is to give the floor to the participants, where they can share their knowledge on how to make similar projects on campuses. These videos will be posted on YouTube and the SLL website for the general public. Up to date, four projects were filmed: Mediterranean biome in Atrium, Tile glass (upcycling of glass waste), Topyraq (vermicomposting of organic waste), RePrint (use of plastic waste for 3D printing)

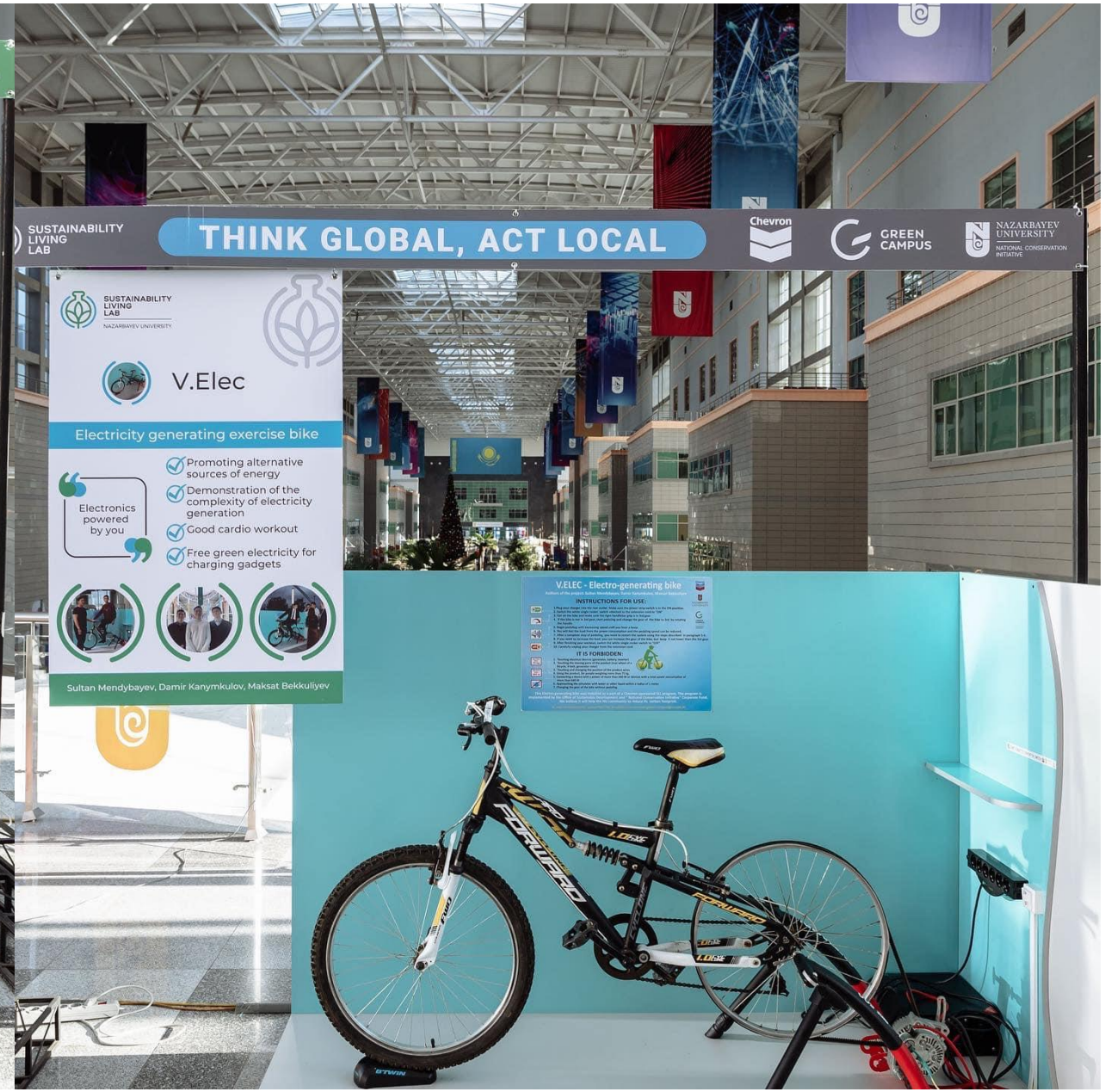


SLL Conference

SLL Conference has become an annual wrap-up event, where all program participants gather for networking and present the projects' progress.

This year the two-day conference contained educational sessions, practical master classes, campus tour, site visit to KazHydromet and presentations from SLL program participants.


SUSTAINABILITY LIVING LAB
THINK GLOBAL, ACT LOCAL
Chevron
GREEN CAMPUS
NAZARBAYEV UNIVERSITY
NATIONAL CONSERVATION INITIATIVE
Renewable Energy / RENEWABLE ENERGY DASHBOARD
0 2.8
ELECTRICAL POWER CONSAMPTION IN BLOCK 13
CO2 EMISSIONS, kg
SUM ALL BLOCKS
ELECTRICAL POWER CONSUMPTION
CO2
6 344
SAMSUNG
SUSTAINABILITY LIVING LAB
NAZARBAYEV UNIVERSITY
Renewable energy Dashboard
Application for monitoring the consumption of electricity and heat energy on campus
Save energy - save life!
Interactive information about productivity of the renewable energy sources and consumption of electrical energy
Assessment of the performance of renewable energy installations on the NU campus
Competition among blocks to reduce electricity consumption
Anvar Kolumbetov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V.Elec
Electricity generating exercise bike
Electronics powered by you
Promoting alternative sources of energy
Demonstration of the complexity of electricity generation
Good cardio workout
Free green electricity for charging gadgets
Sultan Mendybayev, Damir Kanymkulov, Maksat Bekkuliyev
V.ELEC - Electro-generating bike
INSTRUCTIONS FOR USE:
IT IS FORBIDDEN:

Thank you!