

# National Polytechnic University of Armenia

## Breakout session: Leading Sustainable transformation

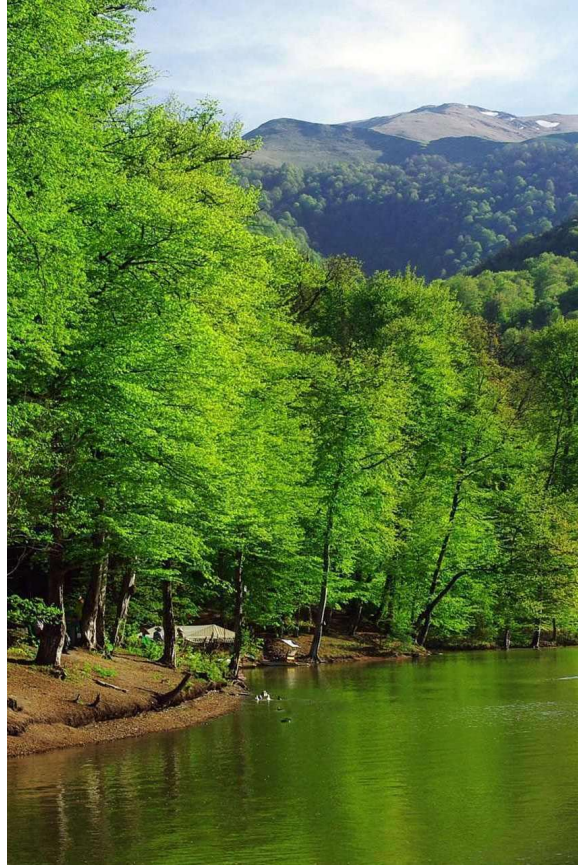
2025 EUA Annual conference

*10<sup>th</sup>-11<sup>th</sup> of April 2025, Riga, Latvia*



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Sustainability is not a destination - it is a **continuous process** of learning, adapting, and leading together.



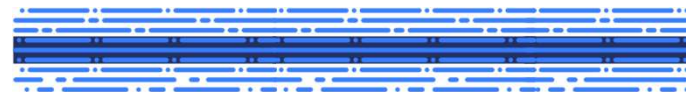
- Dilijan, Armenia -

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The leading techno-  
NPUA is logical  
foundation in Armenia



Who we are?



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b  
c





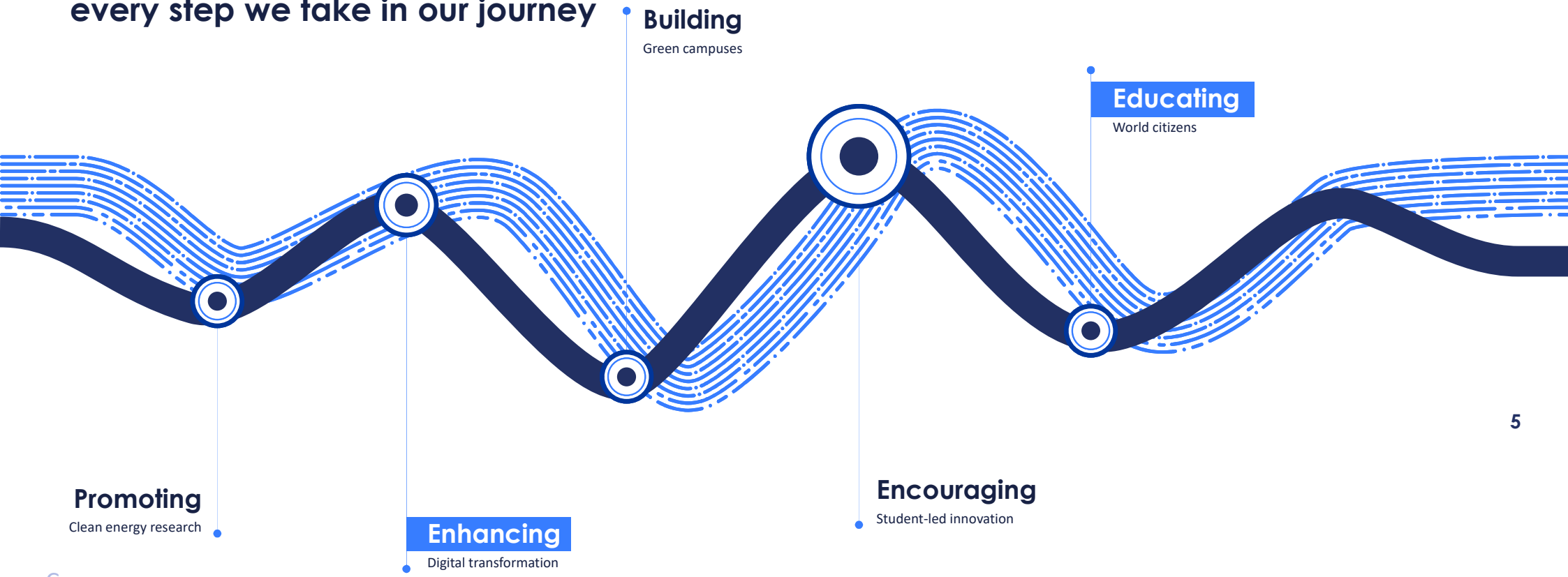
**- Our Mission -**

We strive to continuously develop the entire cycle of technological education and research excellence - starting from pre-school to higher education - with a strong emphasis on human-centered learning. Our goal is to educate and empower learners who can develop **transformative** and **sustainable solutions** to the complex problems facing both Armenia and the world..





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• It's a living guide that leads us to  
our strategies, partnerships, and  
every step we take in our journey



C  
b  
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## Recognizing the growing need

For HEI's to respond to environmental, social, and economic challenges - not only through academic discourse, but through institutional transformation.

01

02

## We approached sustainability

not as a single project, but as a mission-wide commitment, embedding it into our educational models, research priorities, and operational strategies.

03

## Examination of technological advancements

Where their environmental impact at the national level has gained importance, alongside a growing emphasis on adopting alternative methods and materials across various industries and scientific fields.

04

## New approaches began to circulate more widely

It has always been a multi-dimensional journey—one that required courage, flexibility, and innovation.



**This journey  
has not  
been  
without its  
challenges.**



**to structural reforms**

From limited resources

02

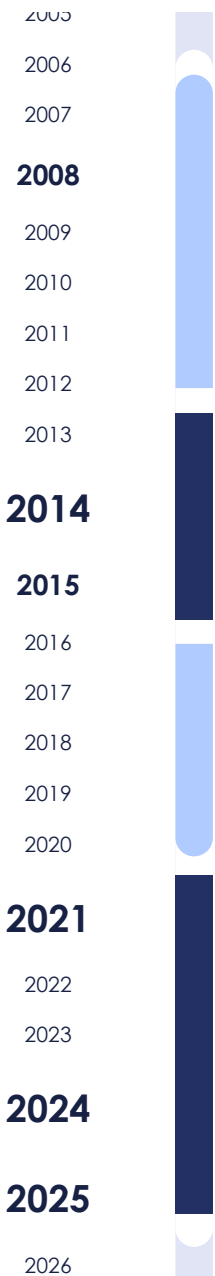
**to aligning with  
global standards**

From the need for cultural changes

03

**Each challenge pushed  
us to think deeper, act  
bolder, and collaborate  
more effectively.**

This is not  
symbolic - it is  
strategic.



Emphasizing the importance of more in-depth analyses of the impact of waste on the environment

# Outline the main directions of analysis

Research initiatives and projects include a sustainability component.

We firmly believe that technological development must serve not only economic progress but also environmental responsibility and social well-being.

It guides our academic and research agendas, policy decisions, and partnerships.

In our most recent strategic plan, we have gone a step further by declaring **sustainable development** as a core institutional value.



## NPUA's core values

Our core values form the foundation of our relationships with each other, our stakeholders: the state, partners, employers, society, and others.

[Discover All Features](#)





We strive to accelerate sustainable development and ensure a dignified life for all members of our community through green education, independent research, risk assessment, awareness-raising, and the development of sustainable public policy. The environmental and social foundations of the institution's activities empower learners and staff to take action and make sustainability a central priority.



**- From NPUA's Strategic Plan -**

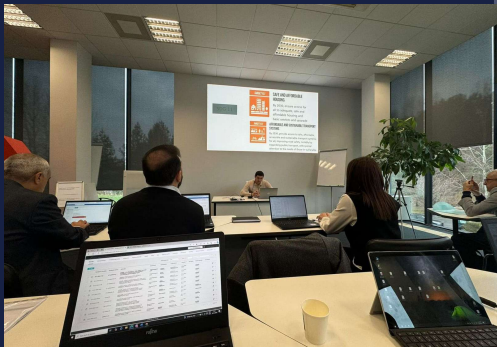


# Climate Change and Sustainable Development Research Laboratory

## Problems in Armenia related to the Sustainable education and research

- 01. There is no institutional consistency in Green education in Armenia. Very few environmental and climate educational program in HEI's
- 02. Decision makers at different levels have a poor understanding of the problems of sustainable development and climate change: Therefore, there is a need for capacity building in this area:
- 03. The population of urban and rural communities has difficulty implementing innovative approaches due to problems with education and often prefers traditional ineffective solutions

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... for interdisciplinary collaboration



... for integrating engineering, energy, environmental sciences



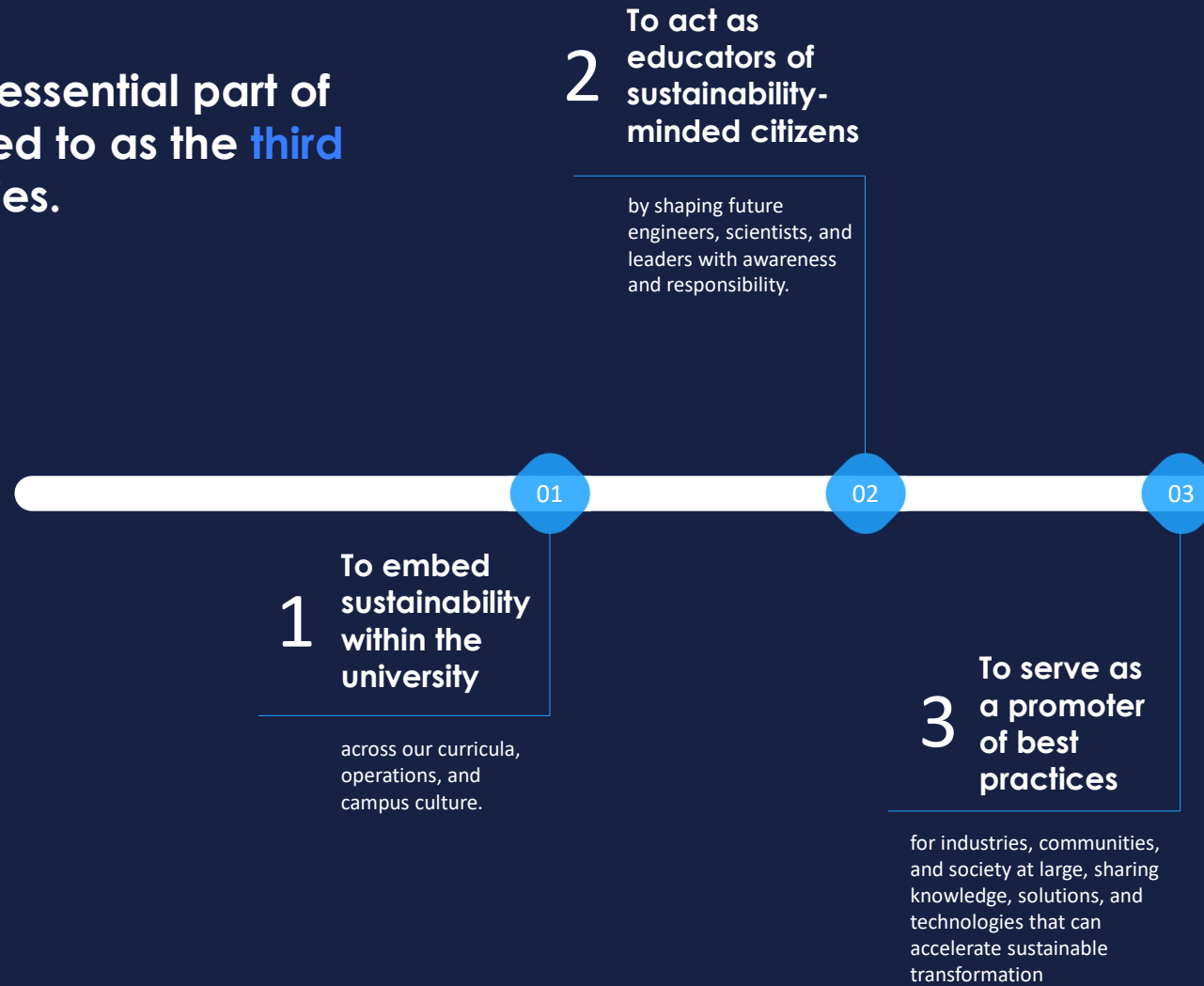
Climate Change and Sustainable Development Research Laboratory serves as a hub for...



... for social innovation to generate impactful, applicable knowledge.

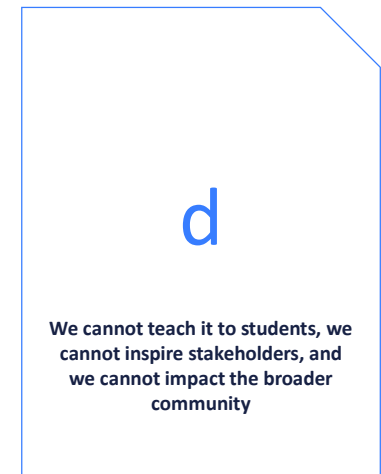
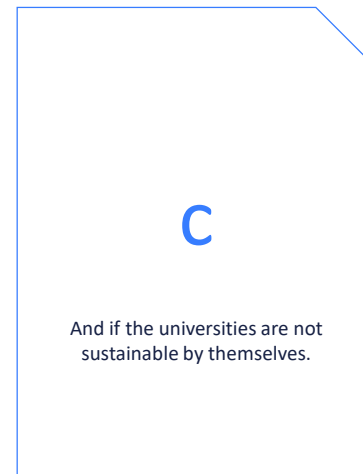
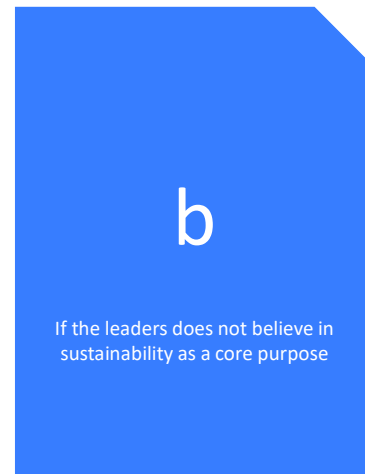
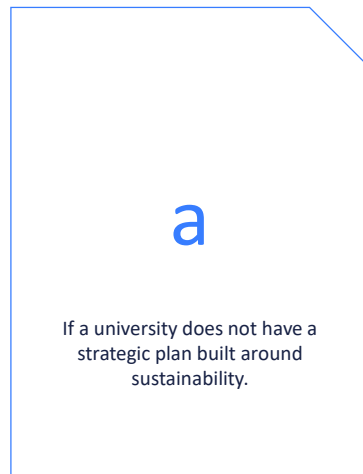


Sustainability is an essential part of what is often referred to as the **third mission** of universities.



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**Sustainability must not be treated as a  
checklist or a separate department -**

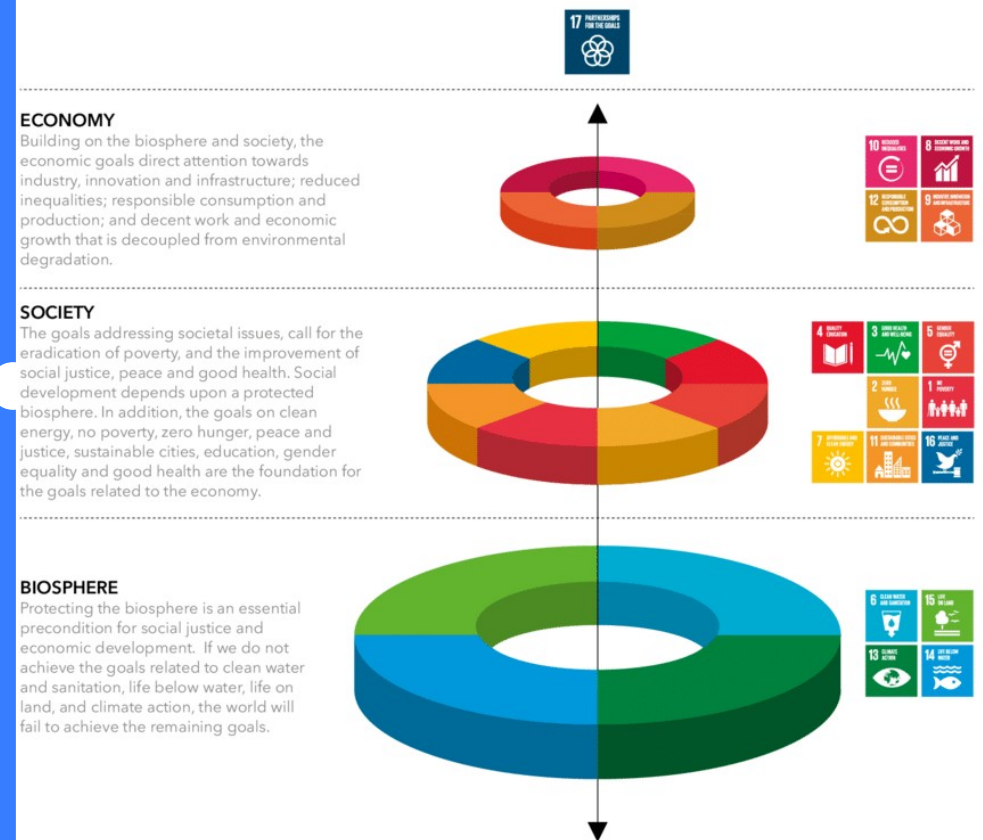


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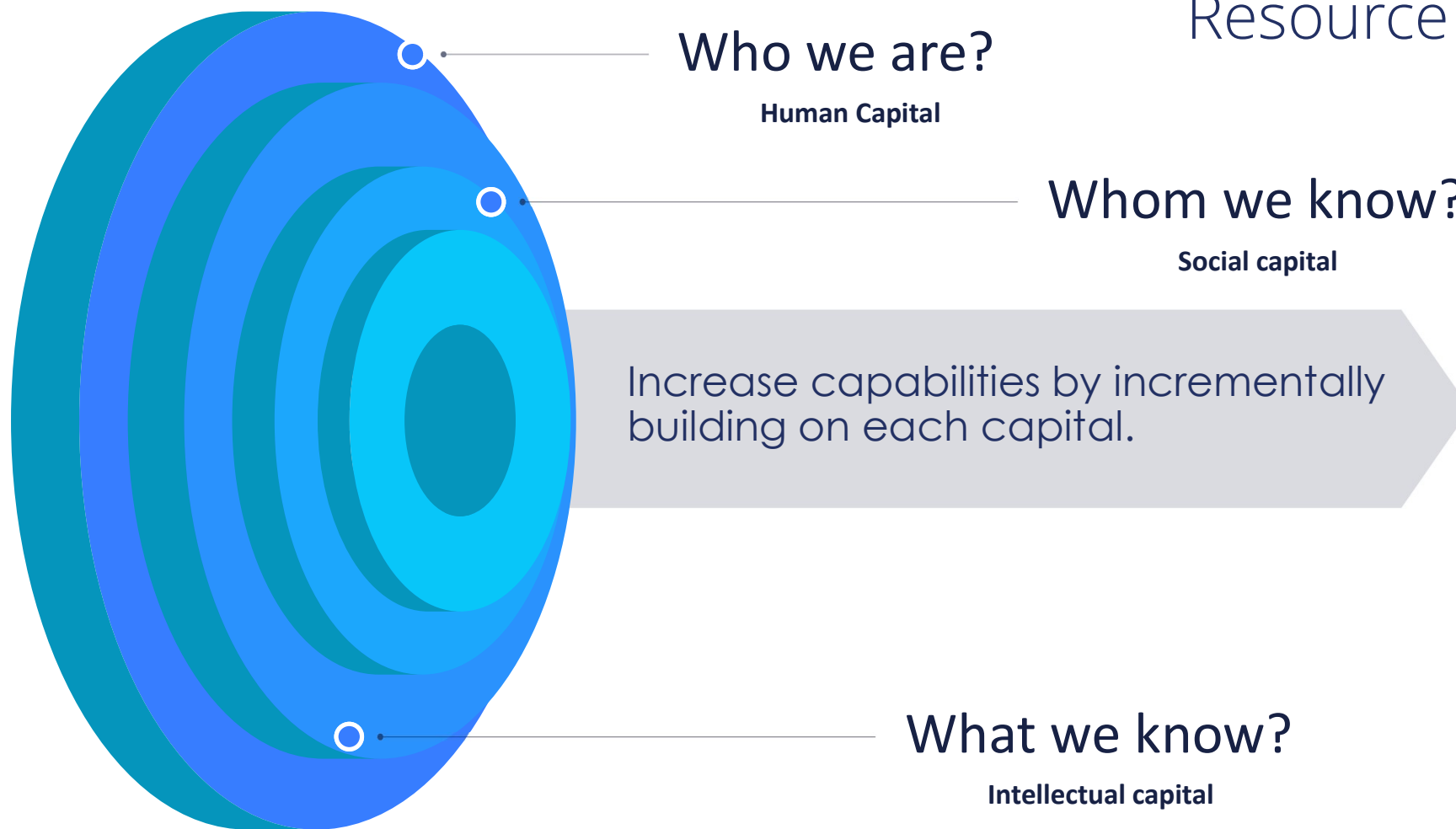
**- it must become a *lifestyle*, a guiding culture that defines how we think, teach, work, and engage.**

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Polytechnic aligns its mission and activities across all three layers of this framework:







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Most importantly

In this complex and interconnected world, discovering yourself as an institution is not a philosophical exercise - it's a strategic necessity. Only when we understand our own potential and context can we direct our actions meaningfully and sustainably.



We need to be bold enough to ask the **right questions**, collaborative enough to learn from each other, and committed enough to **act - step by step, and together.**

# Electricity and Renewable Energy in Armenia

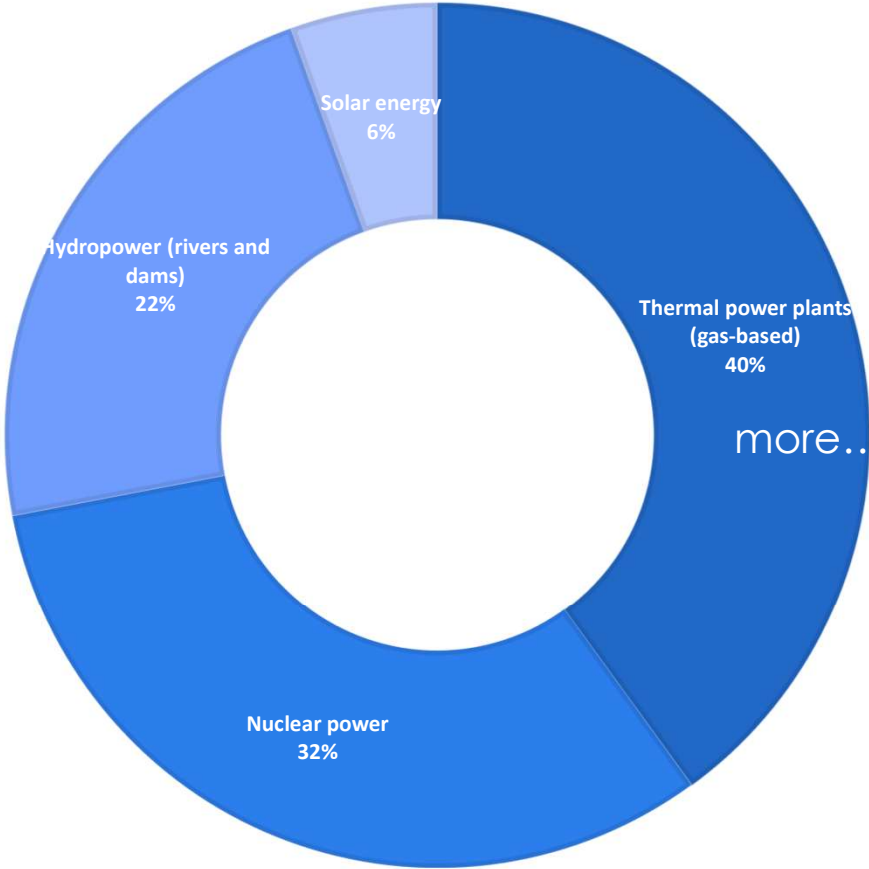
2024 Overview



Portfolio #001

In **2024**, Armenia produced around **8.9** billion kilowatt-hours (kWh) of electricity.

Here's how it was generated:





- Why Solar Energy is Important for Armenia

Armenia has great potential for solar energy thanks to its sunny climate.

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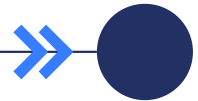
On average, Armenia gets 60% more solar energy than most European countries.

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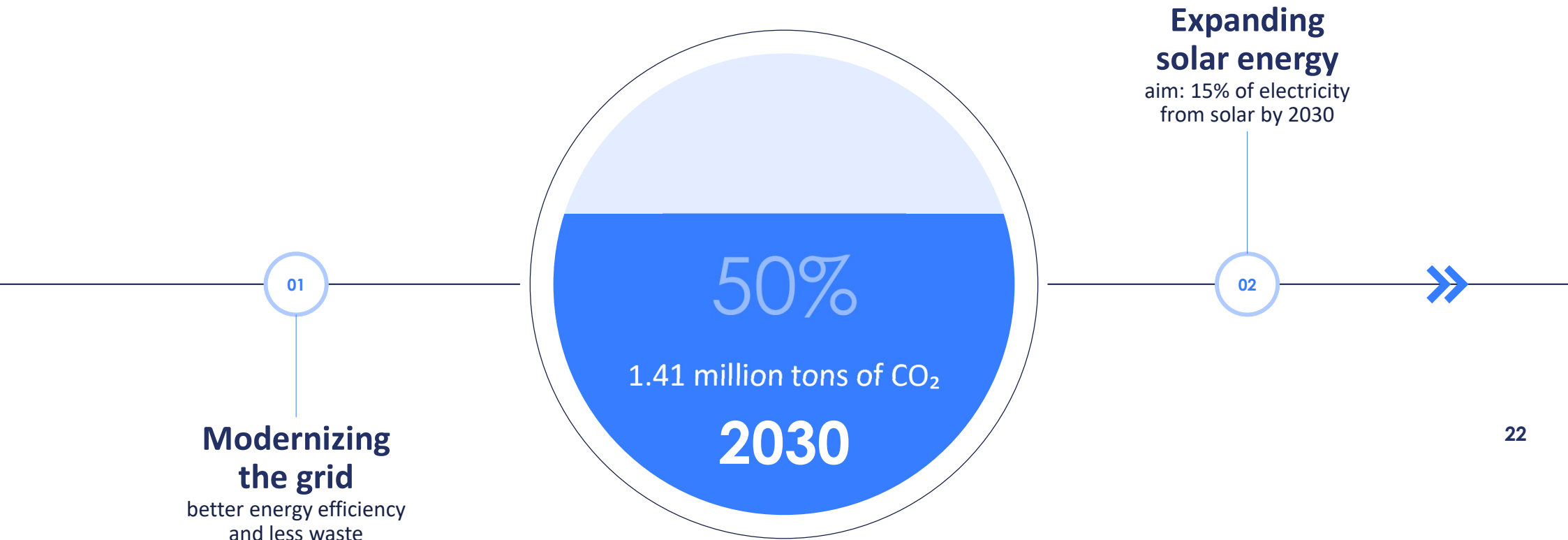
Estimated potential: 8 GW of solar capacity, generating 10–14 billion kWh annually

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Land available: 8,000–10,000 hectares of unused land for solar farms



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• **CO<sub>2</sub> Emissions and Green Goals**



1

Growing solar energy fast.

2

Supporting private investment through incentives.

3

Improving the electricity grid and using batteries for storage.

4

Encouraging both large-scale solar farms and home-based solar systems

## Armenia is moving toward a cleaner, more independent energy system. The government's energy vision includes:

Armenia is becoming a leader in clean energy, especially **solar power**. While wind energy needs more development, it has future potential. With strong policies, international partnerships, and natural advantages, Armenia is on the path to a **greener, more sustainable future**.



Continue

# The Case Study

NPUA example



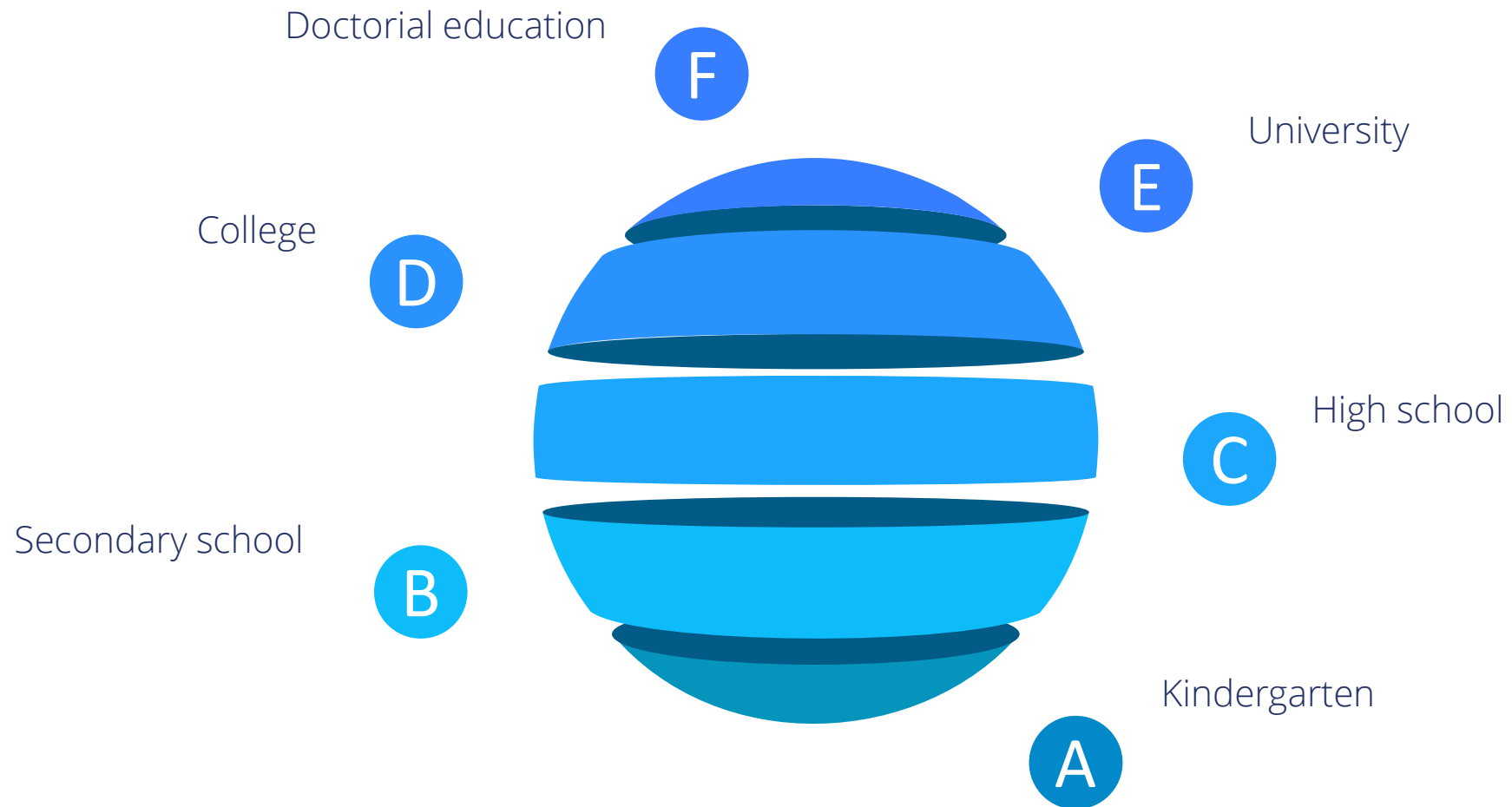


# Who we are?

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We are  
technological  
foundation which  
provide all cycle  
education.



# Providing all cycle education



Under the National Polytechnic University of Armenia Technological Foundation, we cover all levels of NQF

EQF LEVEL 8	ACADEMIC LEVEL	DOCTORATE	MAINTENANCE MANAGERS AND SUPERVISORS, VOCATIONAL TEACHERS
EQF LEVEL 7		MASTER	
EQF LEVEL 6		BACHELOR	
EQF LEVEL 5	POST UPPER SECONDARY LEVEL	HIGHER NATIONAL DIPLOMA	MAINTENANCE TECHNICIANS
EQF LEVEL 4	UPPER SECONDARY LEVEL	HIGHER NATIONAL CERTIFICATE, UPPER SECONDARY DIPLOMA	MAINTENANCE MECHANICS
EQF LEVEL 3	SECONDARY LEVEL	SECONDARY DIPLOMA OR VOCATIONAL DIPLOMA	
EQF LEVEL 2	PRIMARY LEVEL	SECONDARY SCHOOL WITH NO DIPLOMA	
EQF LEVEL 1		PRIMARY SCHOOL	



# Who do we know?

Our institution, our alumni, our partners, and our environment.



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**Embassy of  
the Republic  
of Lithuania in  
Armenia**



**Embassy of  
the Republic  
of Bulgaria in  
Armenia**



**R2E2  
Renewable  
Resources  
and Energy  
Efficiency Fund**



**Polytechnic  
Charitable  
Scientific and  
Educational  
Foundation**



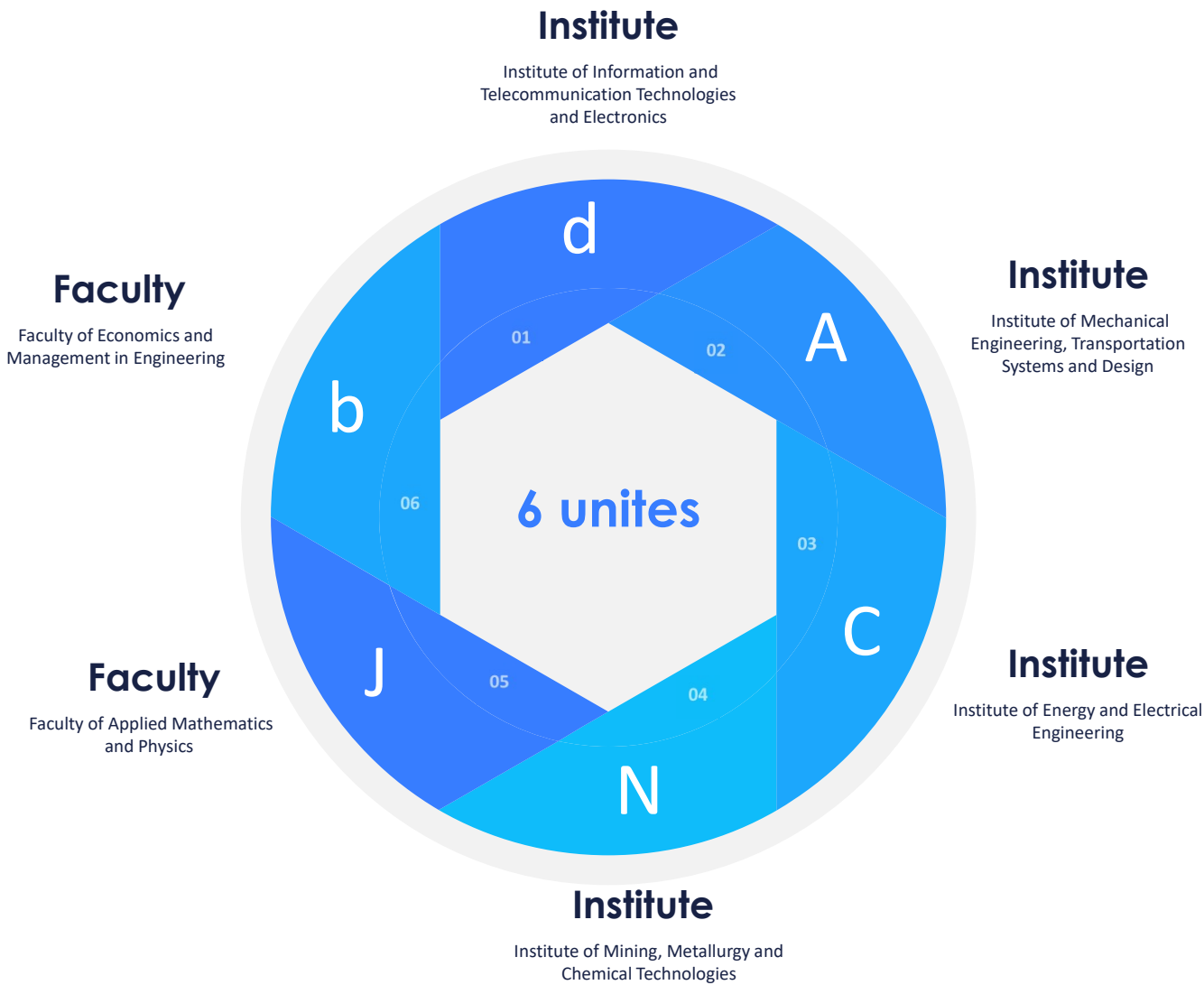


# What can we do?

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We can educate,  
train, research,  
build, and lead. And  
most importantly-  
we can act.











## For decades, we've provided the core talent for Armenia's energy sector.

With this approach, NPUA not only supports Armenia's current energy transformation but helps shape its future energy leadership..

-  Power engineering
-  Nuclear power engineering
-  Thermal power engineering
-  Renewable energy sources

[Learn More](#)





// Donec ornare rutrum neque sit amet pellentesque

## We launched a bold vision to become a Solar University.

In Armenia, it's clear that we not only need to shift toward cleaner energy—but also to reduce overall energy use through smarter technologies and better planning.

Discover All Features



## Education

We integrated solar energy education across all levels—from undergraduate to postgraduate programs.



## Trainings

We trained a new generation of solar energy specialists and researchers



## Technical staff

We even retrained our technical staff so they can design, build, and install solar panel systems



## Research

We prioritized solar energy in our research agenda.





This wasn't just a concept - it became a reality.



# POLYTECHNIC'S ENERGY SOLUTIONS

Since 2021, this collective effort has enabled us to acquire the necessary panels, ensuring that our solar university vision could be implemented not just in theory, but in practice. In response to this challenge, our Engineering Institute developed a new initiative - Polytechnic Energy Solutions.

POWERED:



TEAM

It's a collaborative platform that brings together: BA and MA students, academics and researchers, trained technical staff and a committed community of supporters, donors, and partners

we studied the real demand, assessed the technical and human resources, and began building practical, scalable solutions for Armenia's solar future.

This is how a university can go beyond education—by connecting knowledge, people, and purpose to lead real transformation.

Discover All Features

[WWW.POLYTECH.AM](http://WWW.POLYTECH.AM)

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01

02

03

## Solar University

By combining all these efforts - education, research, technical training, partnerships, and vision - we were able to bring to life the model of the **Polytechnic as a Solar University**.

In 2021, we officially launched the project, and today, we are proud to say that our university has become **100% energy-sustainable**, powered entirely by solar energy.



**NPUA's total  
annual  
electricity  
consumption is  
1,050,000 kWh**

**Offsets 444  
metric tons of  
CO<sub>2</sub> emissions  
per year.**

**Given the current  
electricity cost  
annual savings of  
approximately  
€133,875 in  
electricity.**

**These savings are  
transformational.  
NPUA is  
reinvesting this  
money into what  
matters most.**





visible items of expenditure

# Spreading this success to the wider community

- We offer technical and consulting services to organizations that are interested in installing solar systems.
- Recently for the Embassy of Bulgaria in Armenia, we successfully designed and implemented a solar energy system.
- This is what transformation looks like - when knowledge turns into action, and a university becomes not just a place of learning, but a driver of sustainable change for its society.
- This initiative didn't stop at simply producing solar energy—we made sure it became a living, learning experience.



*NPUA didn't stop at electricity.*

## Linking sustainability and energy with sustainable transport!

Commitment extends beyond higher education – Through the **Vocational Education and Training (VET)** programs, we are also training **technologists** in solar energy systems - ensuring that the workforce of tomorrow is ready to build and maintain these solutions across the country.

**Our goal** was clear: **to close the entire cycle-** from generating solar power to using that clean energy to **charge electric vehicles.**

Boost your business C



Our university has phased out **all fuel-consuming vehicles** from its official fleet.

The **only cars we keep** today are **electric vehicles**

Since we get our energy from the sun, it doesn't pose much of a financial burden for us and we are able to generate additional funds.



We introduced **incentive policies** for our administrative staff to switch to Ev.

And we offer **free EV charging** at university

## Product 04 Forest Gump

Sed interdum, eros nec molestie varius, lorem metus accumsan libero.

85.00\$

# Conclusions

1

For us, sustainability is not a response to a trend - it is a core value integrated naturally into our strategy, educational programs, and institutional identity.

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2

Instead of chasing numbers, we began by assessing our real potential, identifying priority challenges in our country and region, and mobilizing our human and technical resources to create meaningful solutions.

3

This grounded, holistic approach is what allows us to implement a strategy that works - not just for external recognition, but for our students, our staff, and our society.

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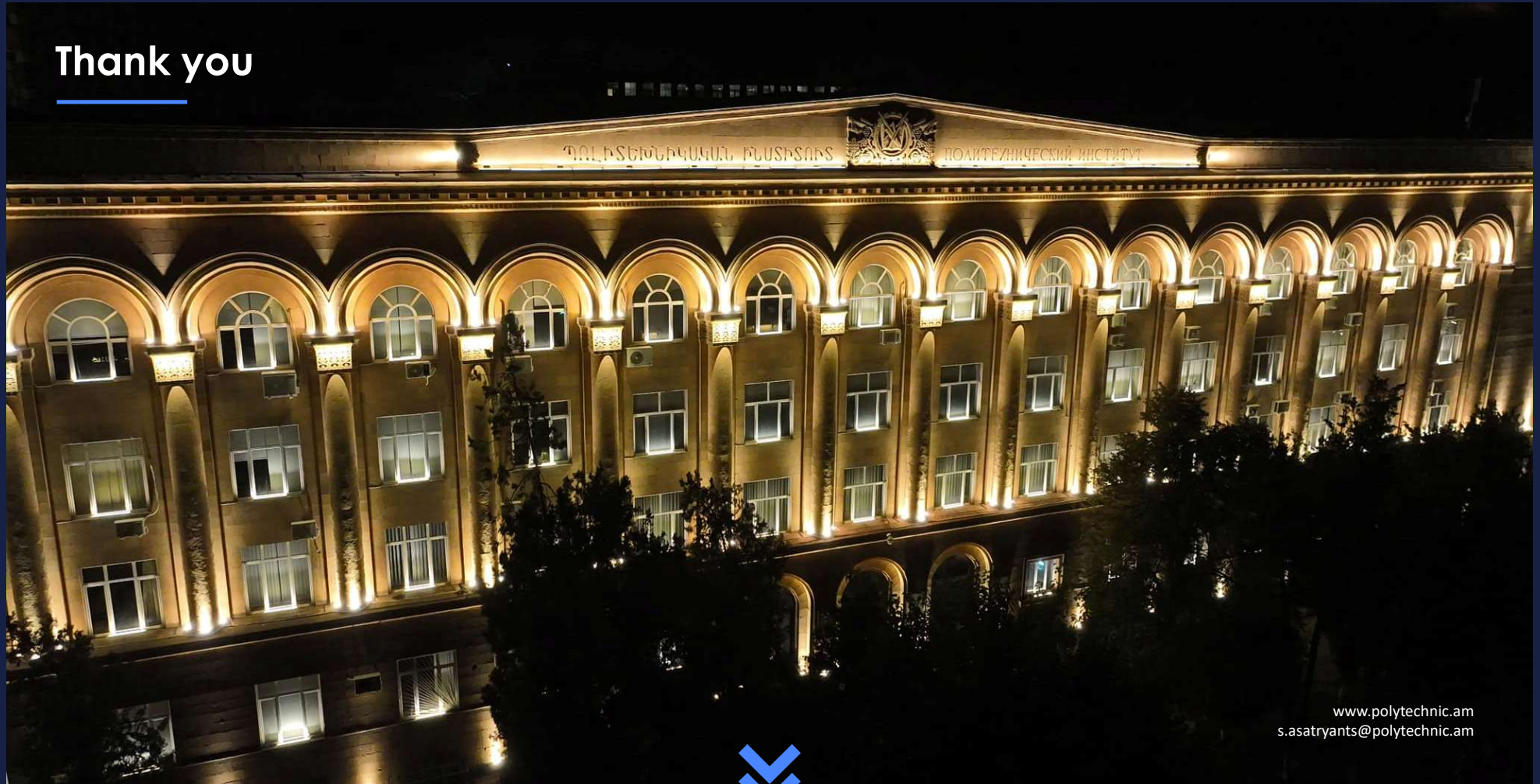
And with that, we continue to grow as a university that leads - not just by example, but with impact.

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Thank you



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