



# AZERBAIJAN

## ICT INFRASTRUCTURE

### SDGS: GOAL 9

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# 1.Motivation

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# 2.Azerbaijan

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# 3.Problems & Solutions

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# 4.Outcomes & impact & challenges



GEORGIA

ARMENIA

TURKEY

NAKHICHEVAN

AZERBAIJAN

NAGORNO-  
KARABAKH

IRAN



Baku

Caspian Sea

80 MILES

# Azerbaijan



The Armenia-Azerbaijan War



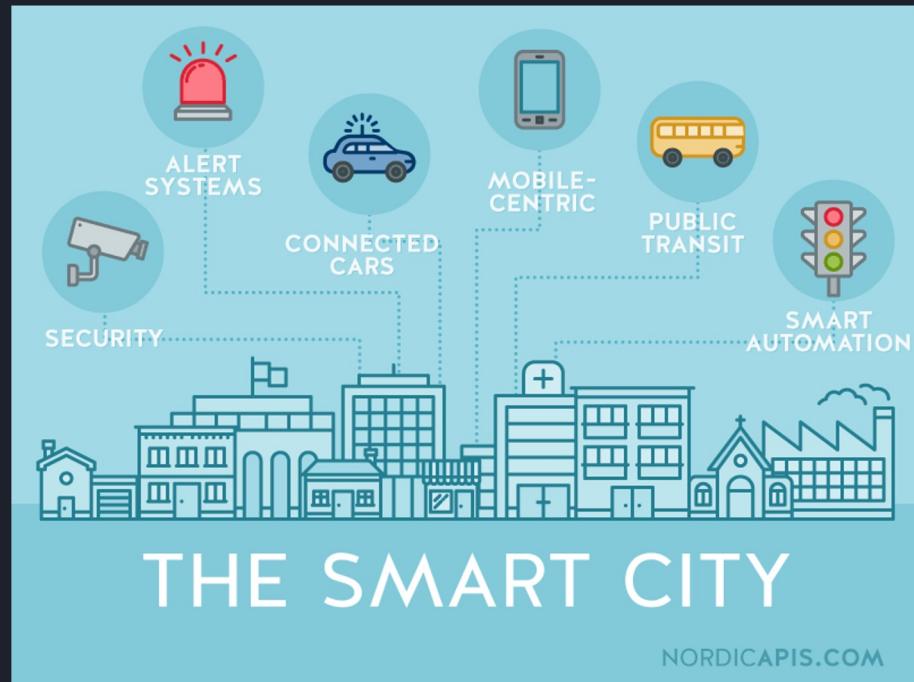
Azerbaijan prepares for Karabakh  
resettlement in “smart villages”

# Azerbaijan & SDG9

## 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



resilient infrastructure, promote sustainable industrialization, and foster innovation



# Azerbaijan & SDG9

automation including cold & heat resistant homes, management of household waste, or the installation of hydro and solar energy station



## Azerbaijan to build 'smart cities' in liberated regions

President Ilham Aliyev says reconstruction will begin soon in Karabakh, other areas

Ruslan Rehimov | 26.01.2021



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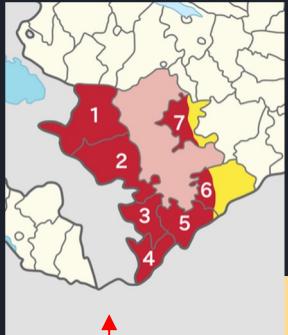
# Azerbaijan & SDG9



in established cities in Azerbaijan the situation is different

# Azerbaijan

- Baku is the capital and largest city
- following the 2020 Nagorno-Karabakh war, the seven districts were returned to Azerbaijan control.
  - 10 million people
- post-Soviet transition into a major oil-based economy
  - GDP per capita is about 42.60 billion dollars



# Azerbaijan & ICT Road Map

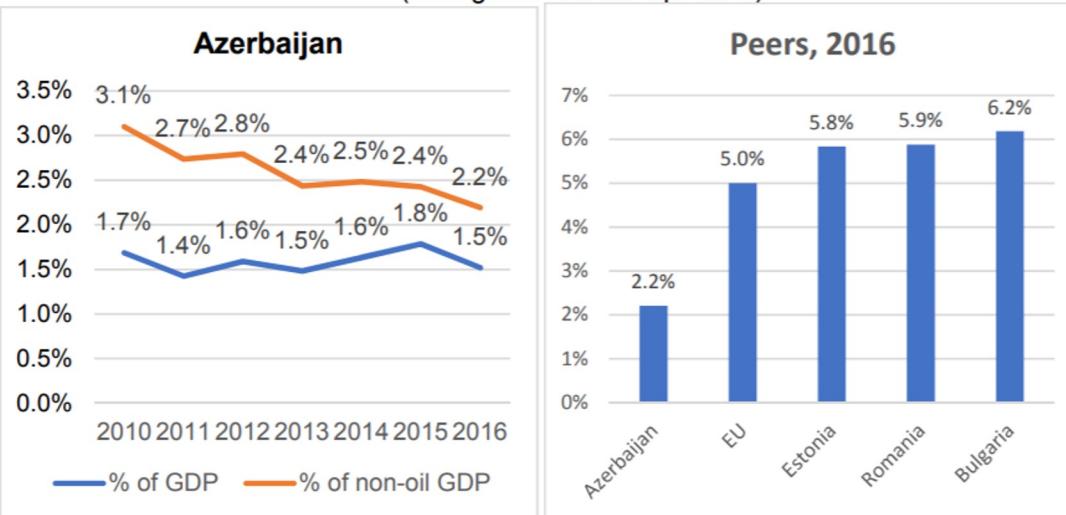
**Table 1: Strategic Roadmap for Telecommunications and Information Technologies in Azerbaijan Republic**

<b>Strategic Target</b>	<b>Priorities</b>
1. Improve governance structures, and strengthen ICT	1.1. Establish an independent regulatory body 1.2. Liberalize the telecommunication market 1.3. Increase mobile infrastructure investments
2. Increase productivity and operational efficiency of the business environment	2.1. Extend digital payments 2.2. Extend technology-based operations in business environment 2.3. Upgrade technology education with the involvement of businesses 2.4. Improve the electronic systems of government institutions 2.5. Increase knowledge and skills in the ICT sector, and apply ICT in education system
3. Digitize government and social environment	3.1. Improve the information systems of government institutions 3.2. Create an end-to-end integrated e-health infrastructure

Source: Government of Azerbaijan. 2016. *Strategic Roadmap for Development of Telecommunications and Information Technologies in Azerbaijan Republic*. Baku.

# Azerbaijan & ICT Road Map

Figure 2: Information and Communication Technology Sector  
(% of gross domestic product)



EU = European Union, GDP = gross domestic product, ICT = information and communication technology.  
Source: The State Statistical Committee of the Republic of Azerbaijan (SSC) and Statistical Office of the European Union (Eurostat).

No integrated approach combining traffic, weather, public sanitation, and sensors with public safety information

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MOBILE  
SOLUTION

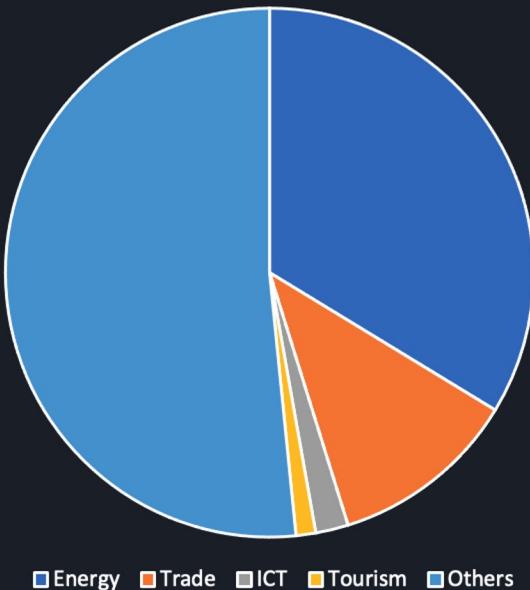
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# STATUS of INFRASTRUCTURE

- GDP: 72.4 billion Manat (equals \$42.5 billion USD)
  - Energy – 33.7%
  - Tourism – 1.2%
  - ICT – 2.0%

GDP by Sector  
\$42.6 Billion USD



# STATUS of INFRASTRUCTURE

- “Azerbaijan 2020: A Look to the Future”
  - Strengthen economic growth
  - Increase diversification away from fossil fuel
  - Develop key sectors
- National Strategy of the Republic of Azerbaijan on Information Security and Cybersecurity for 2021-2025
  - Reflect and prevent possible cyber threat

## "AZERBAIJAN 2020: LOOK INTO THE FUTURE" CONCEPT OF DEVELOPMENT

### CONTENTS

1. The current situation
2. Modern challenges
3. Azerbaijan 2020: Strategic View and Main Priorities
4. Towards a highly competitive economy
  - 4.1 The formation of an economic model based on effective state regulation and mature market relations
  - 4.2 The improvement of the economic structure and the development of the non-oil sector
  - 4.3 Support for scientific potential and innovative activity
5. The improvement of the transport, transit and logistic infrastructure. The balanced development of regions
6. The development of information and communication technologies and ensuring transition to an information society
7. The development of human capital and the establishment of an effective social security system
  - 7.1 The main tasks in the sphere of the population's health and the health care system
  - 7.2 The formation of a modern education system
  - 7.3 The improvement of the social security system
  - 7.4 The provision of gender equality and the development of family
  - 7.5 The development of youth potential and sports
8. The improvement of legislation and strengthening of institutional potential
9. The development of civil society
10. The protection and effective management of cultural heritage
11. Environmental protection and ecological issues

**"Azerbaijan 2020: A Look to the Future"  
[2014 – 2020]**

# WHAT ICT PROBLEMS?

I

RAPID  
MOTORISATION

II

WASTE  
DISPOSAL

III

POLLUTION  
OF LAND  
AND AIR

I

RAPID

MOTORISATION

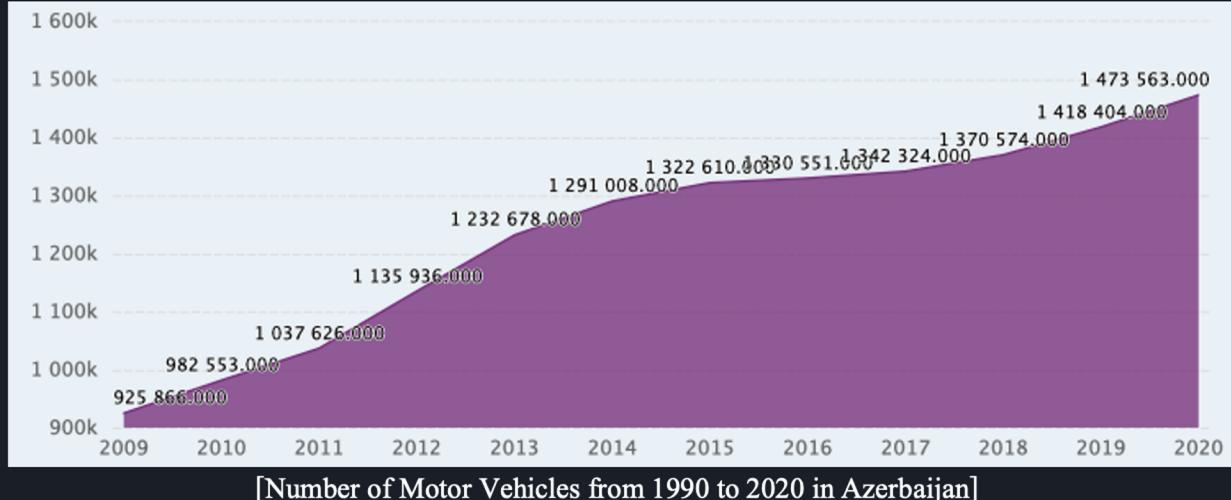
ANY PROBLEM?



Car Ownership



Environmental & Traffic Problems



<Domino Effect>

Increase of car == CO2 emission, noise, air pollution

# II

## WASTE DISPOSAL

ANY PROBLEM?

Eastern Partner Countries:

= include Armenia, Azerbaijan and Ukraine

“50 % of the waste is dumped illegally  
and does not reach the sanitary landfill”

- World Bank Group -

# III

## POLLUTION OF LAND AND AIR

ANY PROBLEM?

Azerbaijan's biggest sector in GDP is Energy (33.7%)

“Land are degraded through high saline, climate change and lack of access to water”

- The Global Environment Facility Partnership -

I

## RAPID MOTORISATION

Decreases CO2 emission &  
form safer driving environment

ANY SOLUTION?

- [60% traffic related casualties] changing from petrol consuming automobiles into micro-mobilities
- [2.5 million tons of CO2 emission] per year
- [100% public space]

# I RAPID MOTORISATION

ANY SOLUTION?



Green Link Determining system

# II

## WASTE DISPOSAL

ANY SOLUTION?

- Collect data from sensing monitors
- Notify team through central server



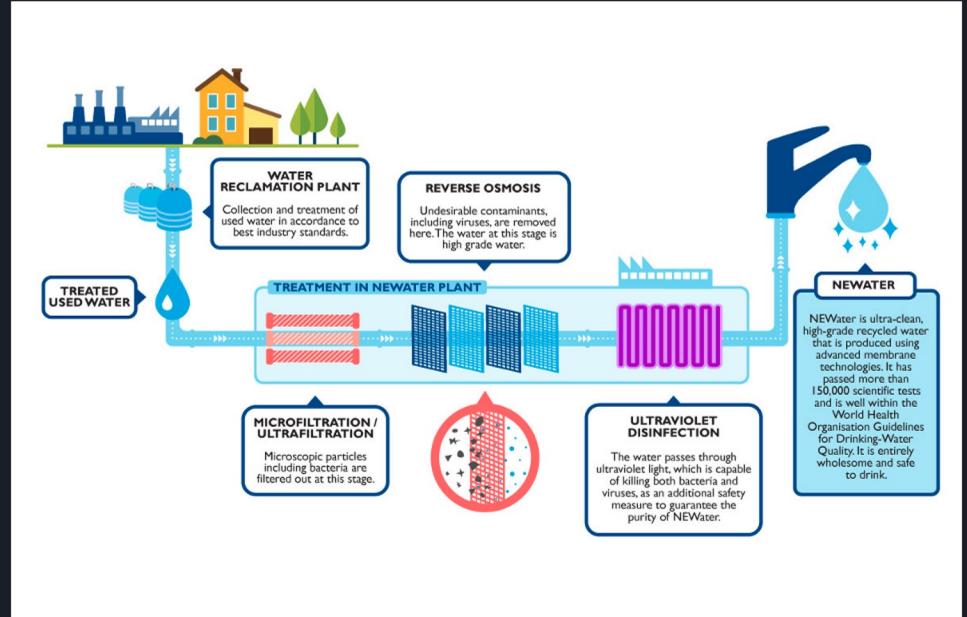
Green Link Determining system

# II

## WASTE DISPOSAL

ANY SOLUTION?

- Satisfy 55% of water demand by 2026
- Remain water loss at 4.6%



Green Link Determining system

II

WASTE

DISPOSAL

ANY SOLUTION?

- Increased resource-use efficiency
- Adoption of clean and environmentally sound technologies



Target

**9.4**

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

UN Sustainable Development Goal 9

# III

## POLLUTION OF LAND AND AIR

ANY SOLUTION?

- Uses big data AI analysis
- Collect data of:
  - Temperature, Soil condition
  - Wind direction, Weather forecast and etc.

### Farm Connect



Agriculture Analysis System

# III

## POLLUTION OF LAND AND AIR

ANY SOLUTION?

- Increase production of tomatoes by 30%
- Expect sales of more than \$10 mln USD
- Enable farming in underdeveloped greenhouses

## Farm Connect



Agriculture Analysis System



# Challenges



# Transportation Transformation



E-Shared Bicycles and Electric Scooters

# Transportation Transformation

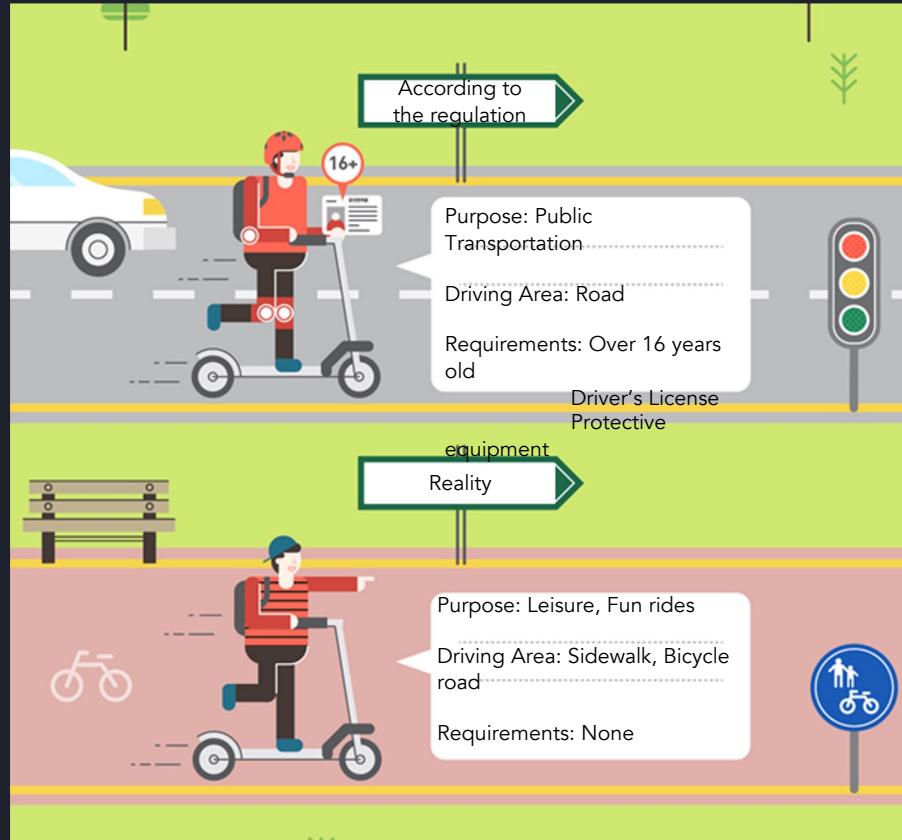
- Doubles every year
- 1242 Reported illegal cases a day
- Injuries that lead to 2~12 weeks to recover for pedestrians
- “Kick Elks”



“E-scooter accidents in Seoul rise sharply over past 3 years”  
(2018~2020)

# Transportation Transformation

- Enforce regulations
- Education required



# Waste Disposal



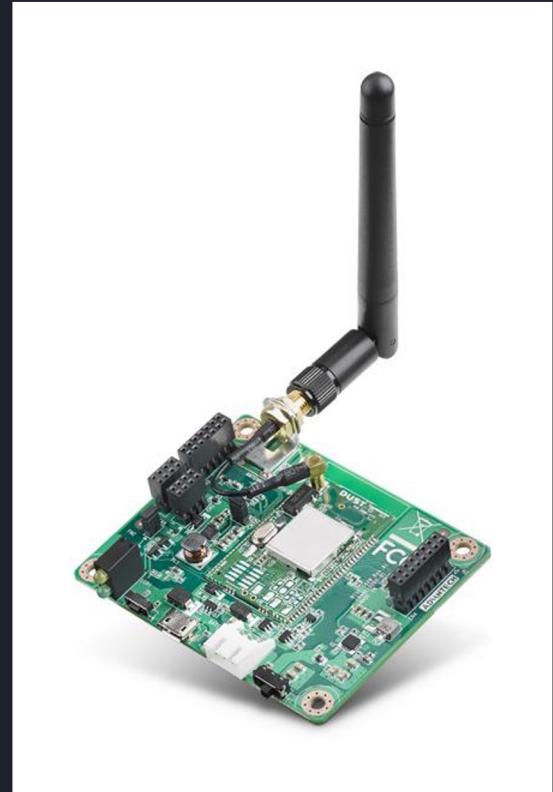
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# Waste Disposal



# Agriculture

- Employing 37% of the population
- One of four priority sectors for diversifying the economy
- Require higher education
- Increase unemployment rate





# Conclusion





THANK YOU  
FOR LISTENING

EST 372  
PRESENTATION