



# Pathways to Sustainable Energy

## Cross-cutting, Adaptive Sustainable Energy Policy Options for Central Asia

12-14 June 2018, Bishkek



# Policy Options and Pathways Discussion

## Introduction

ENERGY



## Table of Content

- I. Summary of Status, Current Policies and Key Sustainable Energy Issues in Central Asia
  
- II. Discussion: Policy Options and Pathways to achieve Sustainable Energy in 2050

# Sustainable Energy in Central Asia

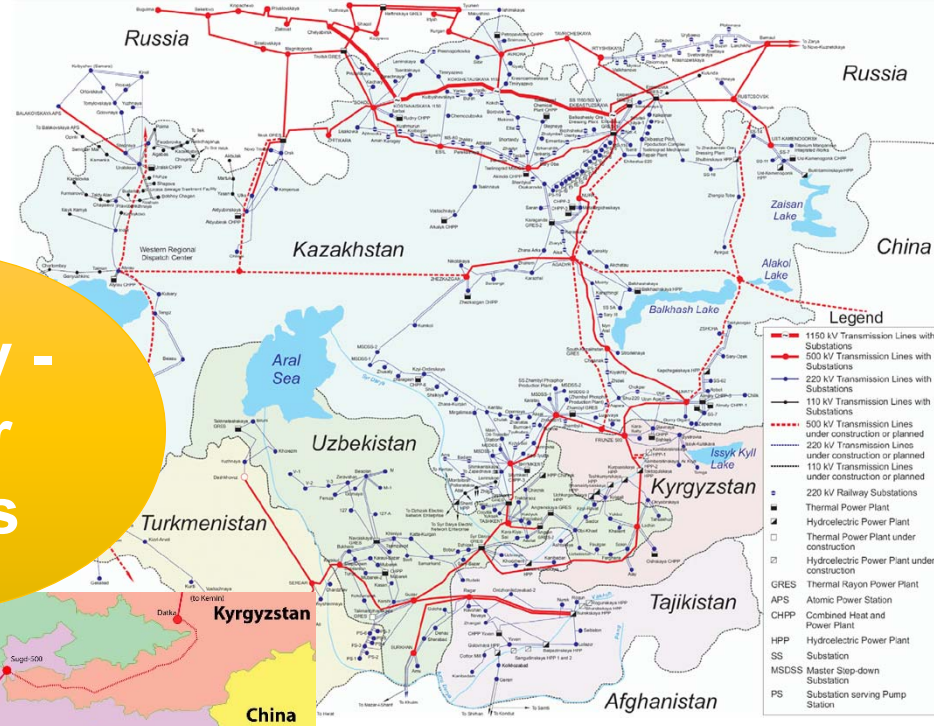
## Overview

ENERGY



### River Basins in Central Asia

### Central Asia Power Grid



**Energy - Water Nexus**

### Energy-water linkages:

- national security
- regional stability
- economic growth



**CASA-1000 (2020)** connecting Kyrgyzstan & Tajikistan with Afghanistan & Pakistan

# Sustainable Energy in Central Asia

## External Drivers

ENERGY



### I. Global Warming

- Climate Change Impacts: Glacier melting, extreme weather events, increased water stress & droughts, food security, hydropower
- Need to increase Energy Infrastructure Resilience

### II. Geopolitics

- One Belt, One Road Initiative: Infrastructure Investments by China
- Infrastructure Investments and Relationship with the Russian Federation, Gazprom
- Fossil fuel exports to and fuel swaps with China, Russian Federation, Afghanistan, Pakistan, India, and also EU
- Priorities and sectoral interests of International Development Banks

### III. Others?

# Defining Sustainable Energy Pillars

ENERGY



**Energy  
Security**

**Sustainable  
Energy**

**Environmental  
Protection**

**Energy for  
Quality of Life**

# Sustainable Energy in Central Asia

## Summary of Key Challenges: Energy Security



### ENERGY

- Highly energy and carbon intensive economies
- Aging energy (and water) infrastructure leading to high losses in generation, conversion and transmission and distribution, and low energy efficiency
- High reliance on large-scale hydro power or fossil fuels
- Power trade among Central Asian countries
- Insufficient regulatory framework for clean energy development and investments
- ...

# Sustainable Energy in Central Asia

## Summary of Key Issues: Energy for Quality of Life



### ENERGY

- Energy affordability challenges
- Decentralized, off-grid RE
- Reliability of energy supply
- Awareness of communities for energy access solutions, energy efficiency and conservation, off-grid RE, etc.
- Health impacts from air pollution through burning of solid fuels for cooking and heating
- ...

# Sustainable Energy in Central Asia

## Summary of Key Issues: Energy and Environment

ENERGY



- Increasing water stress due to climate change; impacts on hydropower potential
- Implementation of commitments made in the Nationally Determined Contributions (NDCs)
- Clean off-grid energy supply to reduce negative impacts on environment
- High energy intensity of irrigation schemes in food production
- ...





## Discussion

# Policy Options and Pathways to achieve Sustainable Energy in 2050

# Holistic, Cross-Cutting and Adaptive Policy Pathways Framework Development: Definitions

ENERGY



## “Cross-cutting”

Linking different sectors, integrated approach to resource management accounting for co-benefits and trade-offs in the use / production of energy-water-agriculture, circular economy

## “Adaptive”

Be reactive, respond to an external change, linked to signposts and an early-warning system that alerts that an adaptation of the chosen policy pathway is required

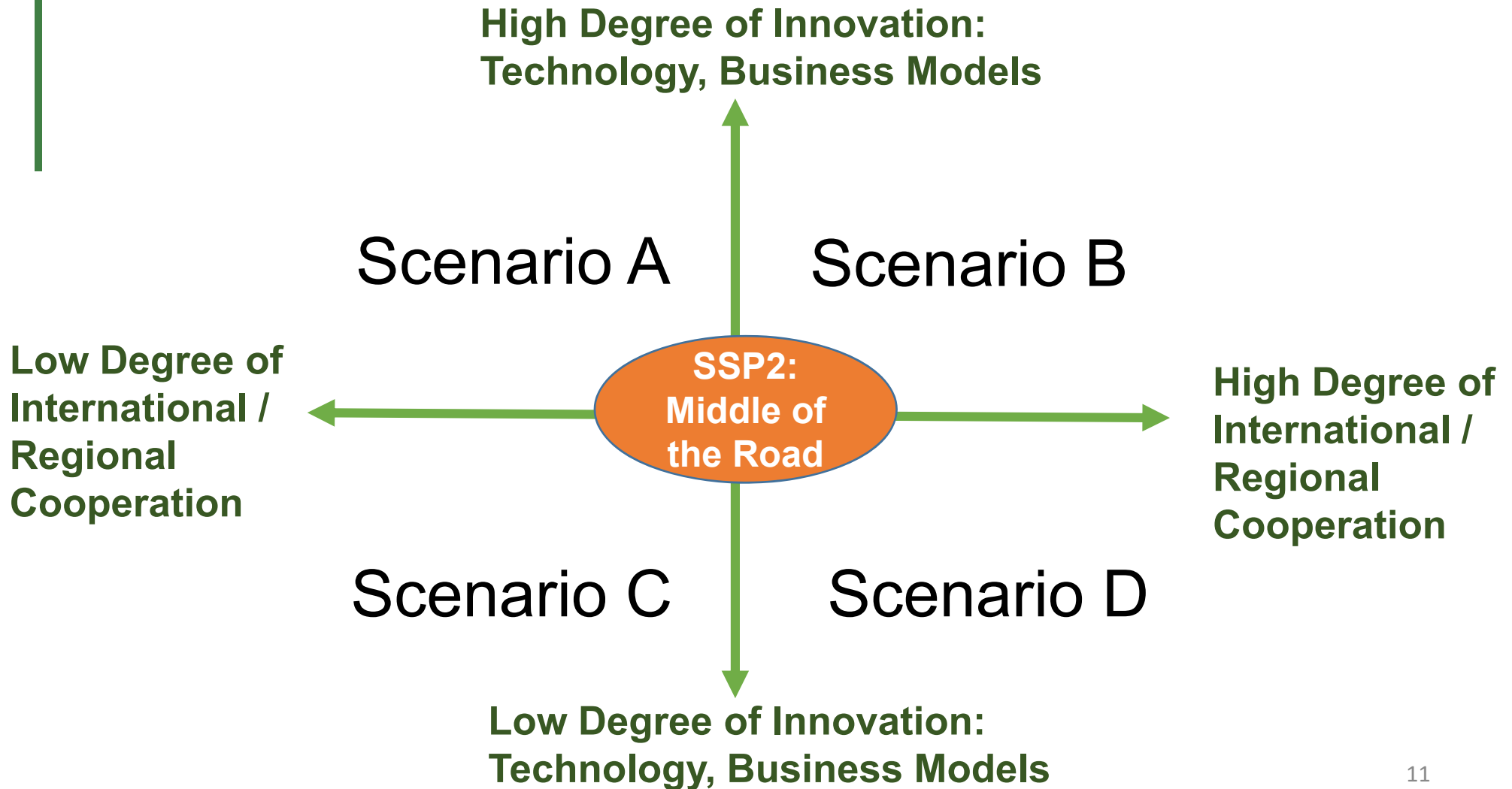
## “Holistic”

Not only focus on one aspect of sustainable energy, possibly combination of different sustainable energy targets (pillars) and policies in one approach

# Energy for Sustainable Development Storylines providing four scenario spaces



ENERGY



# Stakeholder Inputs Policy Options Development

ENERGY



- I. What are (policy) solutions on bi/trilateral & Central Asia regional as well as inter-regional level?**
  - Energy security
  - Energy affordability
  - Water-Energy Nexus
- II. What is the role of regional cooperation?**
  - Intraregional
  - Interregional (FF exports, trade, energy markets)
- II. Analyse the benefits of the policy solution along the three sustainable energy pillars**
  - Energy Security, Energy and Environment, Energy for Quality of Life
  - Which pillar / theme is of the highest priority for Central Asia?
- III. What are the most important barriers / challenges to achieve sustainable energy in Central Asia by 2050?**



Thank you!

Lisa Tinschert  
[Lisa.Tinschert@un.org](mailto:Lisa.Tinschert@un.org)  
Sustainable Energy Division  
UNECE  
Date 12 | 06 | 2018, Bishkek