

Lectures to students of higher educational institutions of Turkmenistan

Yagshygeldi Kakayev International University of Oil and Gas
Ashgabat, Tuesday, 30 April 2024

Overall policy and legal framework for the promotion of sustainable energy in the European Union

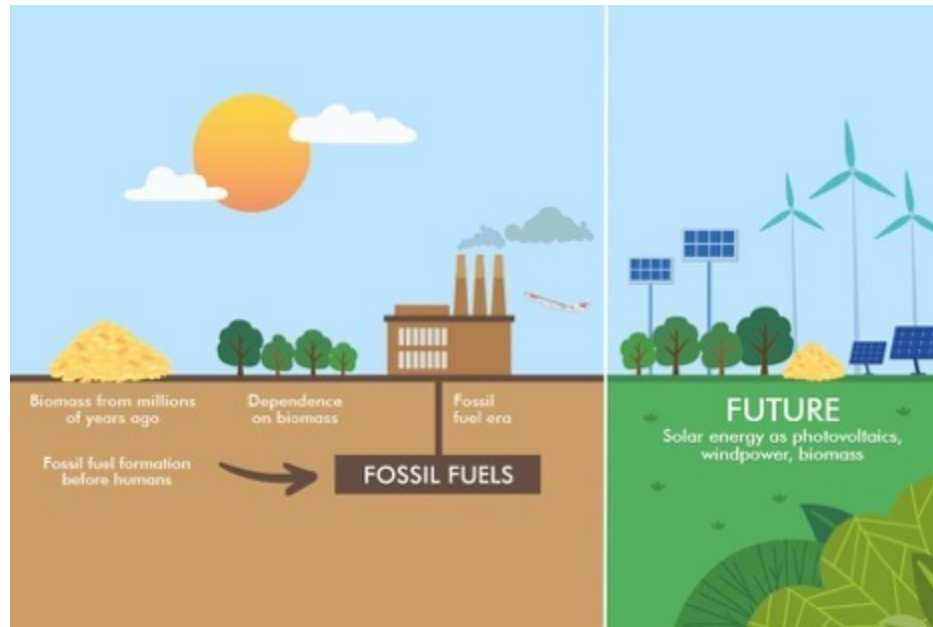
Ilze Purina,
Key expert in energy sector governance, SECCA



WHY SUSTAINABLE ENERGY?

What is sustainable energy?

- **Fossil fuels** (e.g. coal, natural gas and oil) are not only harmful to the planet when burned daily for energy, but they're also **unsustainable as finite resources**
- **Sustainable energy** includes **any energy source that cannot be depleted and can remain viable forever**
- Examples of sustainable energy sources include **wind, solar and water (hydropower), geothermal energy**



What are the benefits of sustainable energy?

- **Improves Public Health** - the burning of fossil fuels in coal and natural gas plants is directly tied to many serious public health issues
- **Creates Local Jobs** - most facilities and sustainable energy infrastructure must be built locally, so it helps create jobs and improve the economy
- **Decreases Carbon Footprint** - sustainable energy creates zero carbon emissions that can harm the atmosphere and contribute to global warming
- **Energy Security** - sustainable energy is by definition the most reliable form of energy
- **Long-term Cost is More Affordable** - making a decision in favor of a sustainable energy source may seem doubtful at first because of installation costs, but the long-term investment pays off. In fact, sustainable energy costs decrease each year

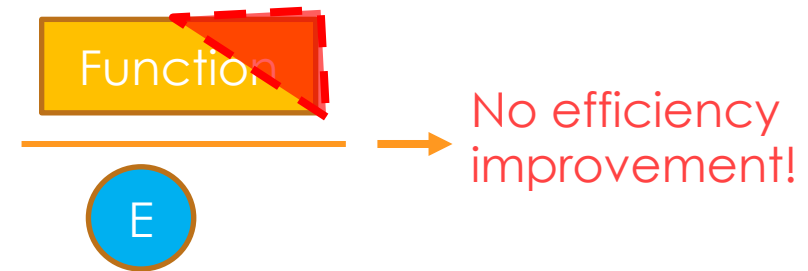
Energy efficiency as a source of energy

- Energy efficiency is one of the **easiest and most cost-effective ways to combat climate change, reduce energy costs** for consumers, and **improve the competitiveness of businesses**
- **Energy efficiency is treated as a source of energy**

What benefits does energy efficiency have?

- **Energy and cost savings** - lower energy consumption means a reduction of costs
- **Better for the environment** - energy efficiency allows to reduce greenhouse gas emissions
- **Improvements in supply** - energy efficiency allows us to optimize the use of natural resources and create a local economy

BUT if we sacrifice the function (as a comfort or productivity) – **it is not an improvement:**



Even with low carbon energy supply energy efficiency provides benefits

ENERGY EFFICIENCY IMPROVEMENT

- Efficiency ensures optimal use of RES
- Reduced energy demand decreases infrastructure costs and prolongs RES system's lifespans
- Efficiency reduces the scale RES of installations needed
- Energy-efficient buildings reduce grid loads, ensuring stability and resilience during supply interruptions

SUSTAINABLE & OPTIMIZED ENERGY

Using energy wisely with renewables saves money, helps nature, strengthens our systems, and prepares us for a green future

RENEWABLE ENERGY SOURCES UTILIZATION

- While renewables are cleaner, their production has environmental costs



WHY ENERGY EFFICIENCY FIRST?

Energy efficiency first principle (1)

- **Energy Efficiency** is one of the key pillars not only to meet EU's climate objectives but also to reduce dependence on fossil fuels and increase security of supply and the use of renewable energy
- **Energy efficiency first (EE1st) principle** is generally understood as a **guiding principle for energy-related policymaking, planning, and investments**
- The principle aims to **treat energy efficiency as a source of energy** in its own right in which the public and the private sector can invest ahead of other more complex or costly energy sources
- This includes **giving priority to demand-side solutions** whenever they are more cost-effective than investments in energy infrastructure to meet policy objectives

Energy efficiency first (EE1st) principle (2)

- The EE1st principle was formally introduced into EU legislation in the Governance Regulation (European Union 2018), which includes a formal definition and **requires Member States to report on the implementation of EE1st in their National Energy and Climate Plans (NECPs)**
- In essence, it is meant to **consider and prioritise** investments in both:
 - demand-side resources (end-use energy efficiency, demand response, etc.)
 - supply-side energy efficiency**whenever these cost less or deliver more value** than default energy infrastructure

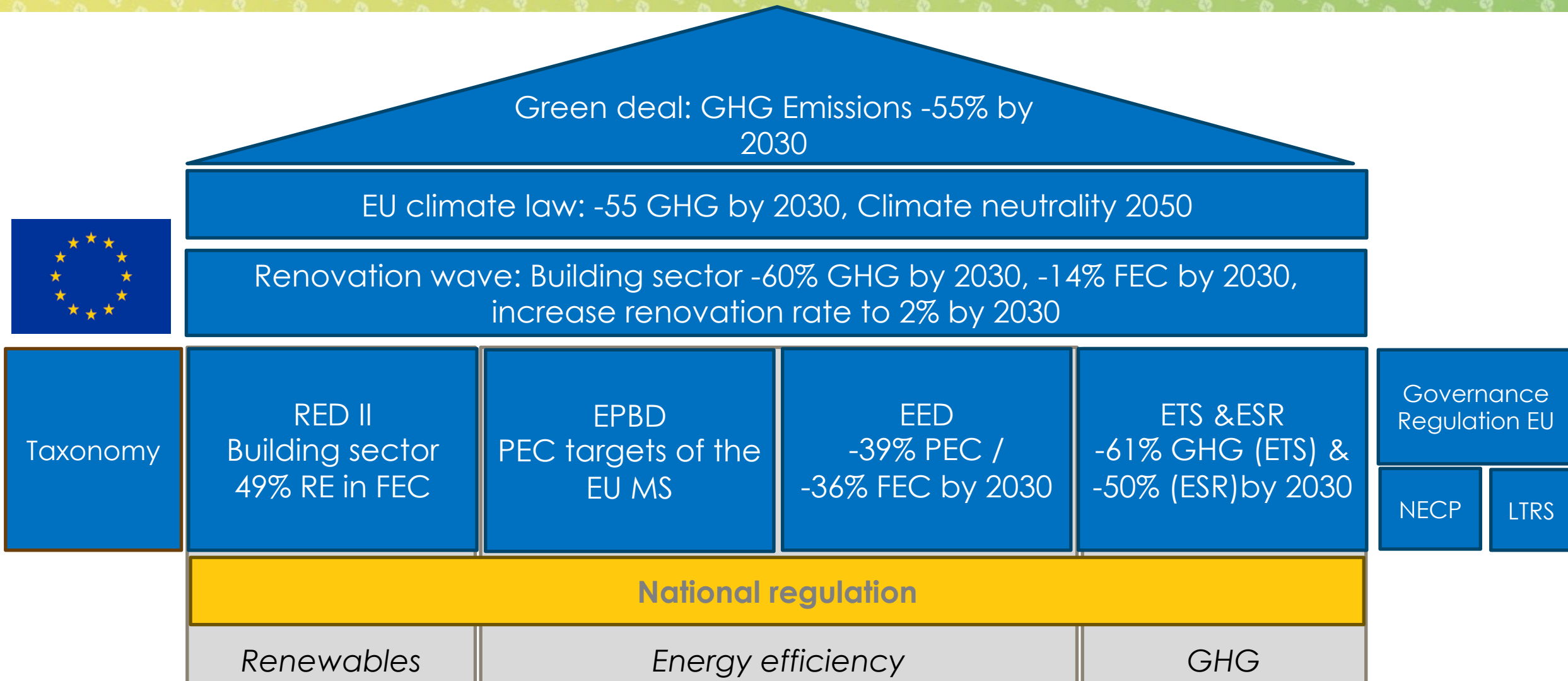


TOWARDS INTEGRATED ENERGY AND CLIMATE PLANNING

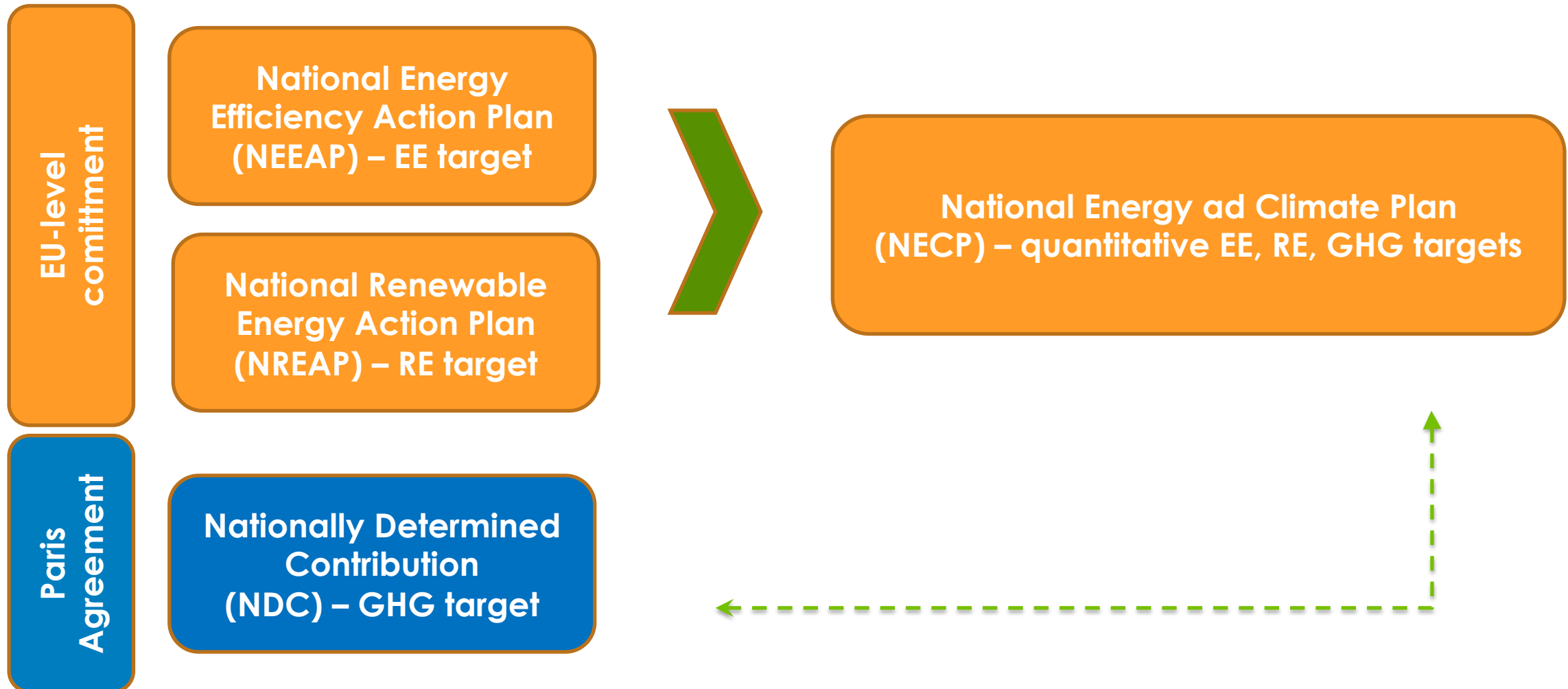


Funded by
the European Union

EU policy framework for integrated Energy and Climate planning



Evolution of energy policy planning process in EU



National Energy and Climate Plan

NECP for 2021 – 2030
with the outlook to 2050



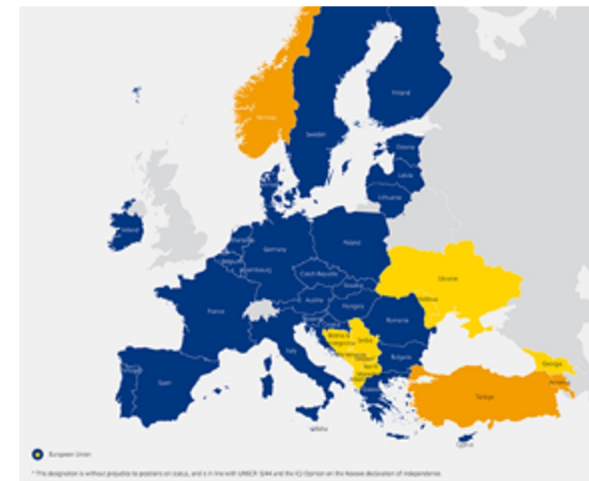
Five (5) dimensions:

- **Energy Security**
- **Energy Efficiency** as a primary fuel
- **Decarbonization** and **Renewable Energy** development
- **Market integration**
 - Cross-border connections
 - Harmonized Market rules
 - Addressing **energy poverty** and vulnerable customers
- **Research and Innovation** for new technologies

This approach requires **close coordination across all ministries**

Dimension 1: Energy security

- **Medium- to long-term objectives** and **standards** relating to **security of supply**, including with regard to diversification of energy sources and supply countries, infrastructure, storage, demand response, readiness to cope with constrained or interrupted supply of an energy source, and the deployment of alternative domestic sources
- The objectives should include **regional cooperation** and the policy measures to achieve these objectives should be **regionally coordinated**



Dimension 2: Energy market

- **Policies and plans** related to **infrastructure development for connectivity** with other **EU Member States** and **Energy Community Contracting Parties** (*The Energy Community is an international organisation consisting of the EU, represented by the European Commission, Albania, Bosnia and Herzegovina, Georgia, the Republic of North Macedonia and Kosovo*. Moldova, Montenegro, Serbia, and Ukraine are known as the contracting parties*)
- **Policies and objectives** related to **market integration**, deployment of flexibility in the power sector, roll-out of smart technologies, and smart grids

Dimension 3: Energy efficiency

- **Existing and planned policies and measures** related to achieving the future **energy efficiency targets in the EU**
- **Special attention** to measures and plans **to** reduce energy consumption in the **building sector** (i.e. building renovation, and investment programmes)
- **Development and quantification of a trajectory** towards 2030 including planned energy savings and final consumption
- The trajectory should specify the national contribution towards the EU energy efficiency targets

Dimension 4: Decarbonisation of the economy

- **Policies and measures** related to the **reduction of GHG emissions** in all key emitting sectors to meet 2030 targets:
 - in the EU (e.g. renewable energy targets), and
 - Nationally Determined Contributions (NDCs) under the Paris Agreement
- These should also contain an outlook towards becoming a low-carbon economy in 2050, including **the trajectory for the share of renewables**, projected electricity demand, relevant electricity producing technologies
- National policies and measures planned to support the **decarbonisation of transport**

Dimension 5: Research, innovation and competitiveness

- **Policies and measures** for accelerating the energy sector transformation, including funding programmes for R&D and subsidy schemes



Content of NECP

Narrative
part

Current situation - overview of the national energy system and policy context of the national plan across the five dimensions

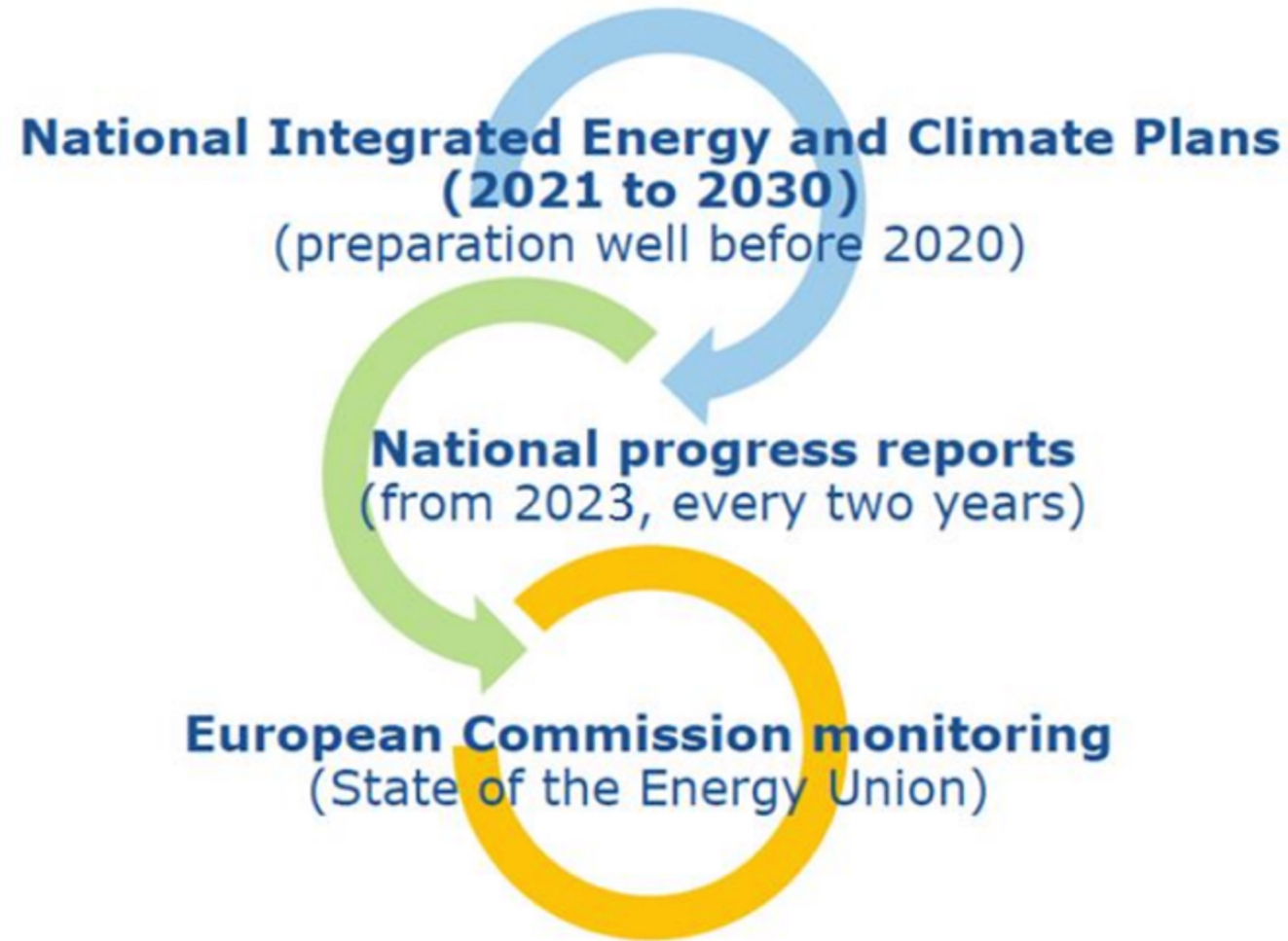
Objectives, policies and measures for the five dimensions

Analytical
basis

Integrated projections and indicators - **a separate section on projections as an analytical basis of the plan**, including reference and policy scenarios assessing the relevant impacts of the policies and measures proposed



Continuous monitoring of implementation progress and results



More information on SECCA website

Latest News and Events

Sustainable Energy Knowledge Hub - EE and RE implementation practices

www.secca.eu