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Sustainable Energy Connectivity in Central Asia

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REGIONAL TRAINING ON MODEL-BASED INTEGRATED ENERGY AND CLIMATE ANALYSES

Almaty, Kazakhstan, 28-31 January 2025

NECP Preparation and Adoption
Georgia Experience

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Expert in National Energy and Climate Plan EnCPs, SECCA

Stantec | intec | ACTED | European University Institute | Robert Schuman Centre for Advanced Studies | FSR ENERGY Florence School of Regulation

Content

- NECP content and process in EU and Energy Community
- NECP Process in Georgia
- NECP Georgia – Content – measures and targets
- Modeling and planning framework
- Discussion and Recommendations

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NECP National Energy and Climate Integrated Plan a tool for robust energy and climate policty

Integrated planning of Energy and Climate policies

Targets for 2030 – gives an outlook to 2050 (climate neutrality benchmark)

Includes targets and measures for

- GHG emissions
- RE share in total consumption
- EE targets
- Energy Security and security of supply
- Research and Innovation and competitiveness
- Energy poverty

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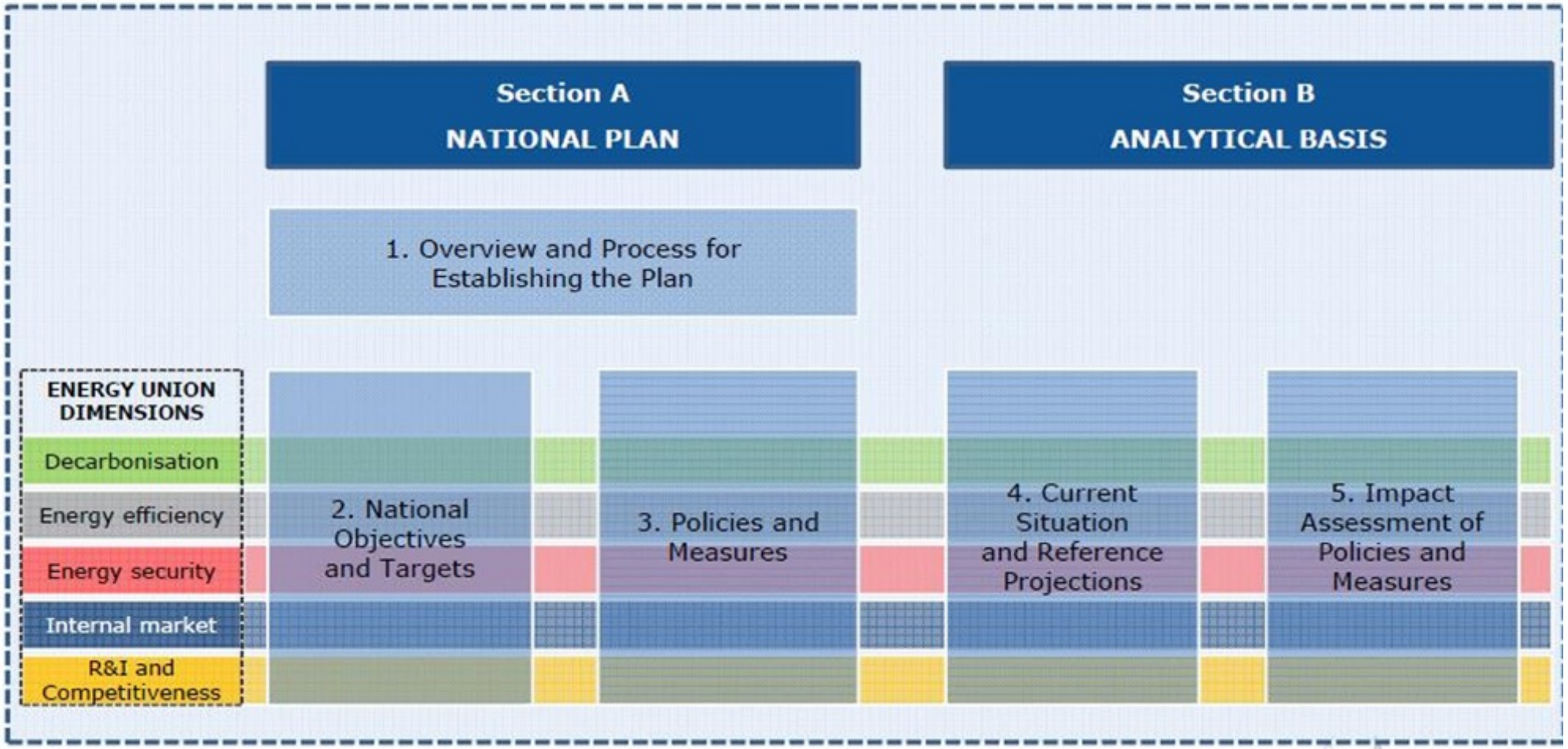
STRUCTURE OF INTEGRATED NATIONAL ENERGY AND CLIMATE PLANS (NECPs)



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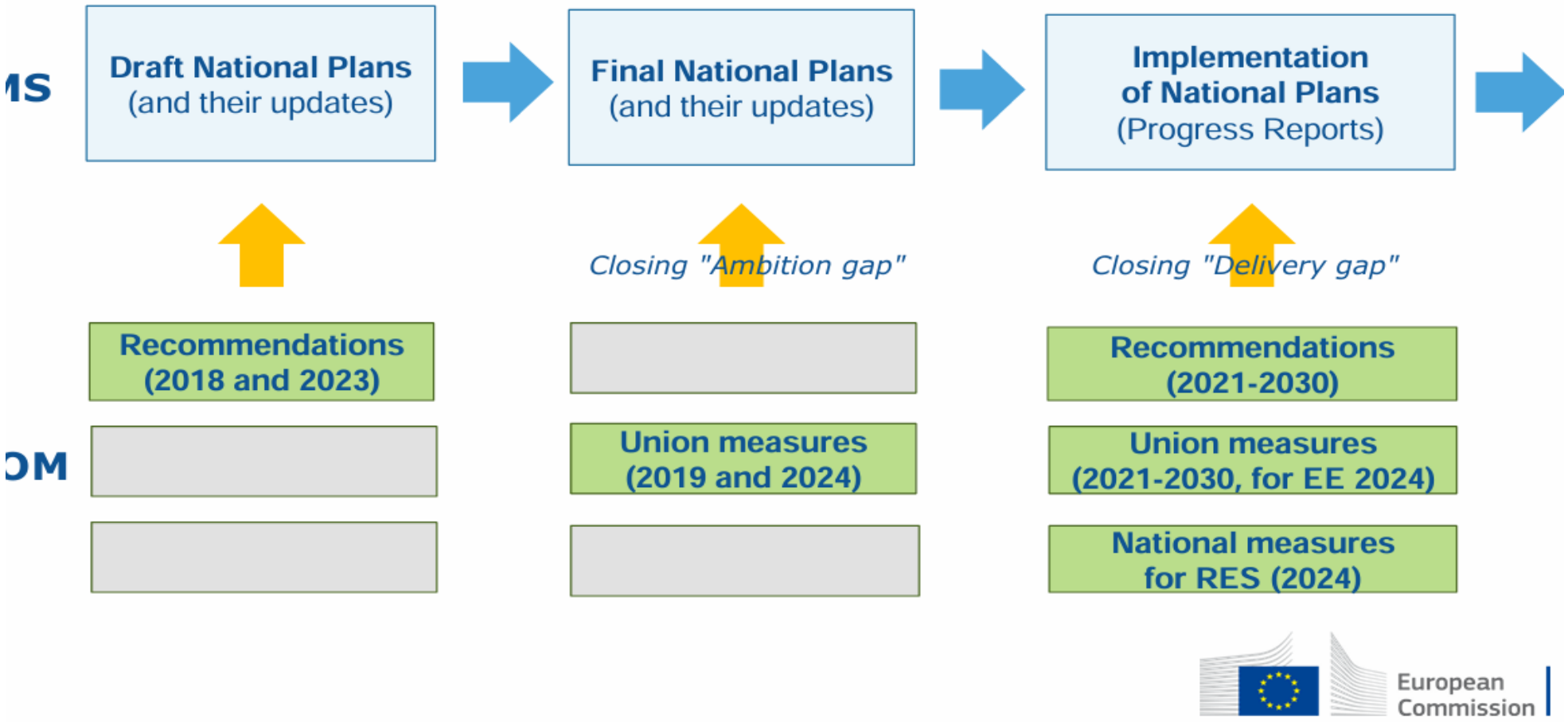
PROPOSED GOVERNANCE PROCESS

FOR ACHIEVEMENT OF ENERGY UNION OBJECTIVES AND 2030 TARGETS



European Commission

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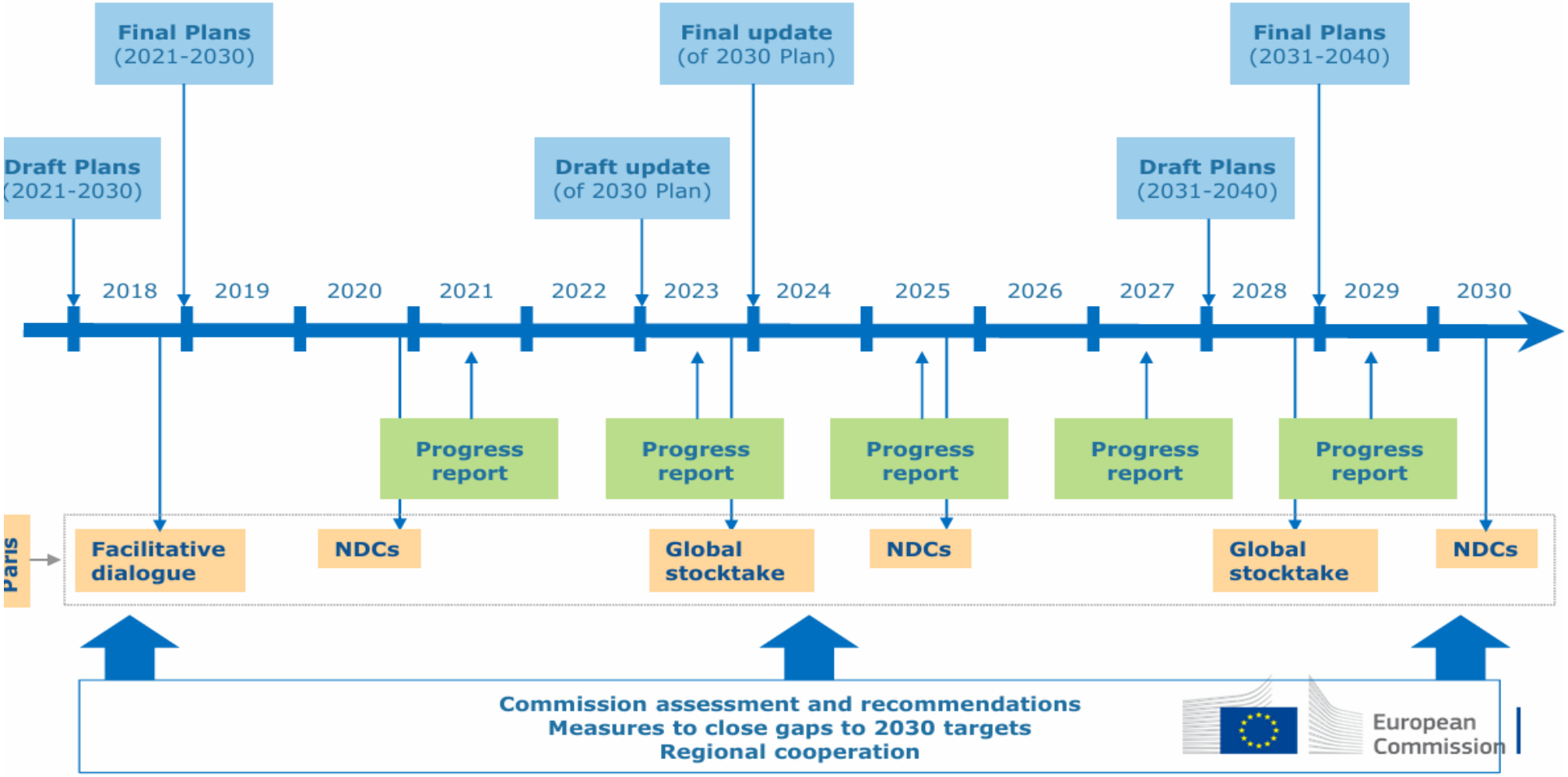
PROPOSED TIMELINE



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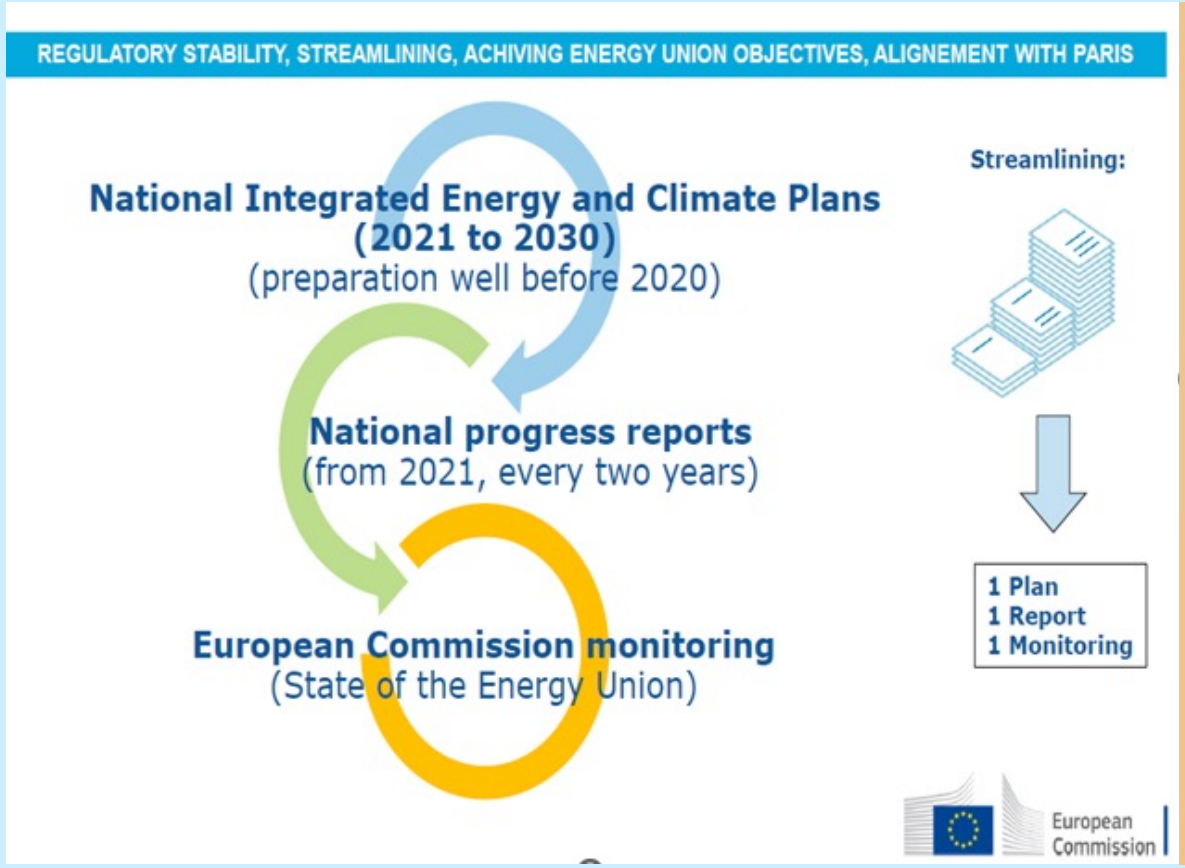
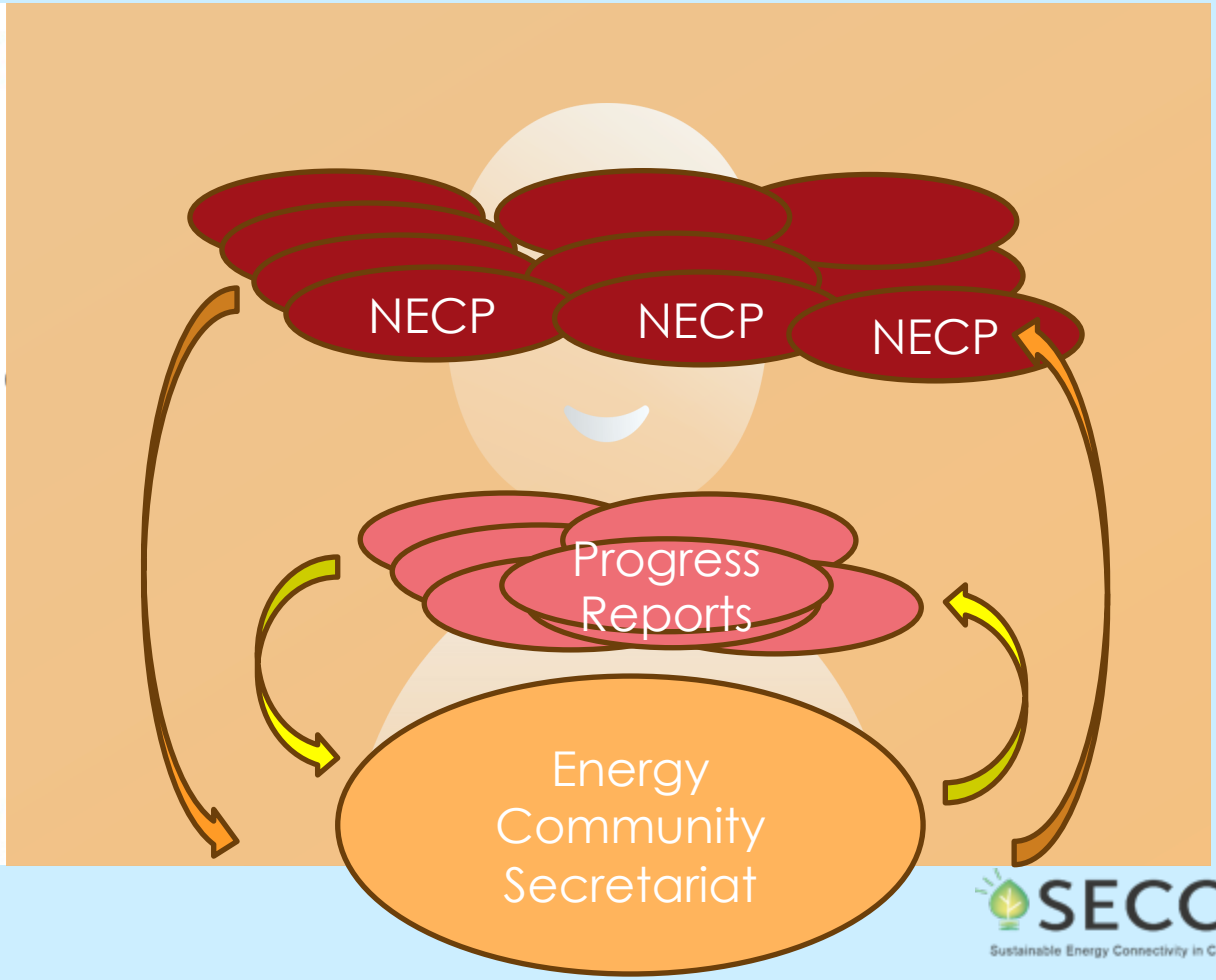
NECP and Energy Union Governance in EU and EnC

EU



Energy Community



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NECPs in Energy Community Conrtacting Parties

Governance and NECPs - Energy Community Homepage

EnC Secretariat plays the same role as EU Commission in EU countries

EnCs – functions

- Oversight and facilitation of the process
- Benchmarking, discussion and agreement on targets
- Facilitation in public discussions
- Oversight of review and reporting process
- Sectoral expertise and support (EE expert, RE expert etc.)

Coordination and experience sharing between countries

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Timeline for EnC NECP process

Deliverable	Period covered	Draft version to be submitted to EnC Secretariat by	Final version to be notified to EnC Secretariat by
1st NECP	2025-2030	30. June 2023	30. June 2024
NECP Progress Report			15. March 2025
NECP Progress Report			15. March 2027
NECP Progress Report			15. March 2029
2nd NECP	2031-2040	1. January 2028	1. January 2029
NECP Progress Report			15. March 2031
NECP Progress Report			15. March 2033

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NECP Georgia Background

- Georgia is a member of Energy Community and implements EU Energy Acquis including Governance Regulation 2018/1999 defining the structure content and procedures of NECP
- Ministry of Economy and Sustainable Development (MoESD) in charge of Energy policy, Ministry of Environment and Agriculture (MEPA) major partner
- According to the Law on Energy and Water Supply NECP is an Annex to National Energy Policy
- NECP adopted on July 27 2024 as an annex to National Energy Policy (NEP)
- NECP -350 pages (500+GE ☹)
- NEP – (80+ pages 😐) – defines the strategic directions in Energy Sector and summarizes the measures of NECP

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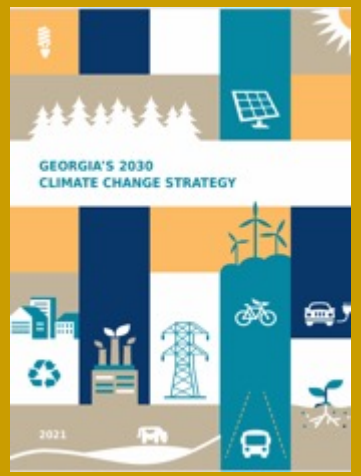
NECP, NEP and other National Documents



National Energy Policy

- Supply security
- Energy economy
- Institutional development
- Environment Protection
- Energy Efficiency
- Renewable Energy
- Energy poverty
- Research and Innovation

LT LEDS

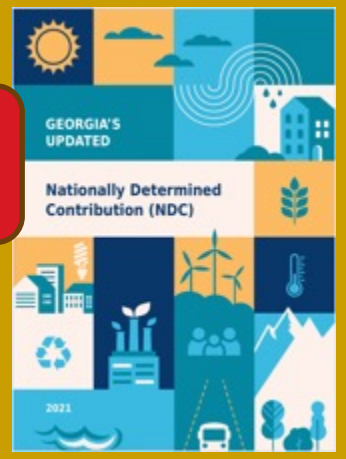
TYNDP Power
TYNDP Gas

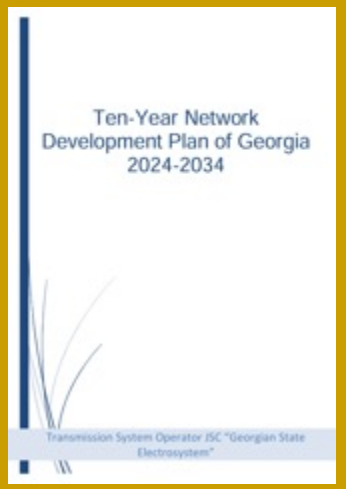
NECP
Decarbonization & RE
Energy Security
Market Integration
Energy Efficiency
R & D & I

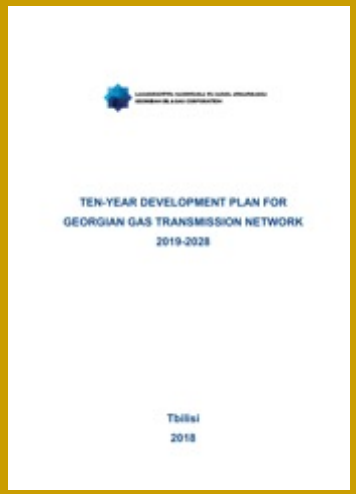
NDC CSAP 21-23 2030

Security of supply reports

NDC







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NECP process organization

MoESD Energy Efficiency and Renewable Energy Policy and Sustainable Development Department

Started from 2014 NEEAP and NREAP – process

- **Content preparation Funded by various donors**

Outsourced to ECO Ltd (UK) – overall coordination and initial draft:

- Decarbonization and Renewable Energy (ECO-MoESD)
- Energy Security – WEG (UNDP)
- Energy Efficiency – ECO - Energy Efficiency Center
- Market Integration – GSE – electricity TSO
- Research, Innovation and Competitiveness – WEG (UNDP)
- Planning (TIMES Georgia) – Remissia DANEP
- ***Coordination challenges***

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NEP as a frame for NECP

- NEP a high level process
- NEP concept preparation 2020 – definition of the document, its goals, structure, coverage and relation to other strategy documents
- Preparation of NEP 2021-2022 - WEG + Sectoral experts USAID
- **Steering Committee** – Ministries and State agencies MoESD, MEPA, MoHSP, Security Council, GNERC, etc.
- **Working groups** by 8 directions (energy security, energy economy, social, environment, energy efficiency, renewable energy, R & D
- **WG meetings** Extensive internal coordination and consultations of state agencies
- Environmental Scoping and strategic ESIA according to environmental legislation
- *Coordination under NEP supported coordination under NECP*

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NECP Process

Process

- Started from NEEAP and NECP in 2014 to define 2020 goals evolved into NECP
- Went in Parallel with LEDS, NDC, CSAP, TYNDP preparation
- Extensive public discussions in 2022
- NEP was developed in parallel with NECP

Extensive environmental and social impact assessment process

- NECP discussion 10 online meetings with 100+ participants
- ESIA conducted

NECP submitted for review By Energy Community Secretariat Jun 2023, recommendations received in Dec 2023

Approved together with NEP in June 2024 by the Parliament

Biennial review and implementation report due in 2026

The NECP process continues to improve many imperfections

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Public Consultations

- NECP preparation and discussion was going at the background of Namakhvani HPP protests. This created an exceptional environment for Energy policy discussion
- Mediation by Energy Community
- 10 public discussions on various themes

Energy Security, EE, RE, energy poverty, environment etc.; mostly focused on large hydro Namakhvani HPP

- Controversial role of Environmental NGOs
- Great opportunity but with a moderate outcome

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Data and input parameters

Data collection

- GEOSTAT

  Energy Balances, economic data, export-import data,

  consumption data, sectoral surveys- Household survey, services sector etc.

- Power system operator

  Generation data, network modeling etc., Ten-year plans

- Regulator – GNERC

  Distribution System data, crypto mining consumption, street lighting and other aggregated data

- Ministry (MoESD)

  Data collection from licensees and big consumers – industry, transport sector, municipal plans

Data feedback

- *Recommendations for further data improvements (identified gaps), sectoral surveys, data aggregation etc.*
  E.g. Services sector- most difficult sector

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NECP Content

Targets

- GHG emissions 35% below 1990
- RE 27.4% share in total energy consumption –very ambitious
- EE 15% saving in primary energy consumption compared to BAU
- Energy security – new interconnections and upgrade of energy infrastructure
- Market integration Cross-Border electricity capacity 5500MW
- RDI – Developing research infrastructure and international cooperation

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NECP Process and next steps

Stakeholder Engagement Prehistory

- Huge protests against Namakhvani HPP

10 moderated discussions with participation of EnC experts

Necessity for revision

Renewal of Scenarios

National Hydrogen Strategy

RED II Renewable energy Directive and related targets

EE directive and related targets

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NECP measures – Decarbonization and Renewable Energy

40 measures in total

31 GHG measures

- Industry
- Agriculture
- Forestry & Land
- Waste and landfills
- Methane fugitive emissions
- Etc.

9 RE measures

- Support of Solar, wind and hydro
- Geothermal and solar thermal

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NECP content represents 96 policy measures

Policies and Measures of Decarbonisation

- Decarbonization (31 measures)
- Renewable energy (9 events)

Policy and measures - direction of energy efficiency

- Energy efficiency of buildings (9 measures)
- Energy efficiency in industry (3 measures)
- Energy efficiency in the transport sector (8 measures)
- Energy efficiency in gas and electricity infrastructure (5 measures)

Policy and measures - direction of energy security (19 measures)

energy poverty (1 measure)

Annex I: Description of measures listed in Chapter 3

Annex II: Detailed description of measures listed in Chapter 3

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NECP Geo. measures by Energy Union Pillars

Decarbonization and RE

- Reduction of industrial GHG emissions
- Reduction of agricultural GHG emissions
- Sustainable forest management
- Sustainable management and recovery of waste (including use for energy purposes)
- Promotion of renewable energy for electricity generation
- Promotion of renewable energy for other energy purposes

Energy Efficiency

- Encouraging EE in industry
- Encouraging EE in transport
- Encouraging EE in buildings
- Raising awareness
- Implementation of certification and qualification systems
- Reduction of losses in electricity and natural gas transmission networks

Energy Security

- Strengthening of critical energy infrastructure
- Improvement of cross- border connections with neighboring states
- Construction of new transmission lines and substations
- Rehabilitation of the existing transmission infrastructure

Market Integration

- Electricity market reform
- Natural gas market reform
- Development of regional markets with neighboring states
- Energy poverty and protection of vulnerable consumers

Research & Development and

- Determination of research and innovation thematic priorities
- Connecting researchers and businesses
- Encouraging innovation
- Encouraging sustainable development through awards and educational programs
- Attracting investments in the research and innovation sector

Two main scenarios considered in the Integrated **NECP**

WEM scenario

This scenario implies that no measures will be taken to reform energy production, management and use to achieve the goals of the Georgian National Energy Policy (NEP)

NECP scenario

This scenario involves the construction and operation of 237 MW of total installed capacity of run-of-river hydropower plants, 430 MW of regulating hydropower plants, 547 MW of solar, 730 MW of wind and 500 MW of gas-fired thermal power plants by 2030. This scenario is an alternative scenario recommended by the strategic document to achieve the goals defined by the NECP

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Challenges - Scenario formulation and targets

- EU Energy Community
  - RED II Renewable energy Directive and related targets
  - EE directive and related targets

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Experience - Modeling aspects

TIMES-Georgia model inherited from other projects operated by individual group - lead - Anna Sikharulidze

12 time slices – 4 seasons X 3 intraday periods (day, night, shoulder) insufficient for

Cooperation with TSO – GSE using the PLEXOS model to develop own plans

Scenarios not a result of economic optimization – measures were redecided and included in the model

Effects of measures and projections not analytically calculated but rather “expert estimate” made by officials

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Challenges organization

Project mobilization and outsourcing

- Agency and Donor project coordination
- Target setting and coordination

Coordination of various sectoral documents

- UNFCCC – NDC
- National Energy Security policy
- EU Energy Community
    - RED II Renewable energy Directive and related targets
    - EE directive and related targets

Engagement of stakeholders and their input (Get a HL Champion)

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Challenges modeling and planning

- Data availability
- Lack of analyses and quantifying the measures
  - E.g. how to quantify the information campaign?
- Scenario analyses and base case scenario agreements
- Measures added or removed
  - E.g. Industry measures removed in the end by policy decision
- New conditions and circumstances
  - Pipeline transport included with its emissions recently – changes whole target structure
- New commitments and subsectoral targets
  - New Renewable energy law (RED II) and related transport sector targets
  - EE law and related targets
  - New hydrogen strategy

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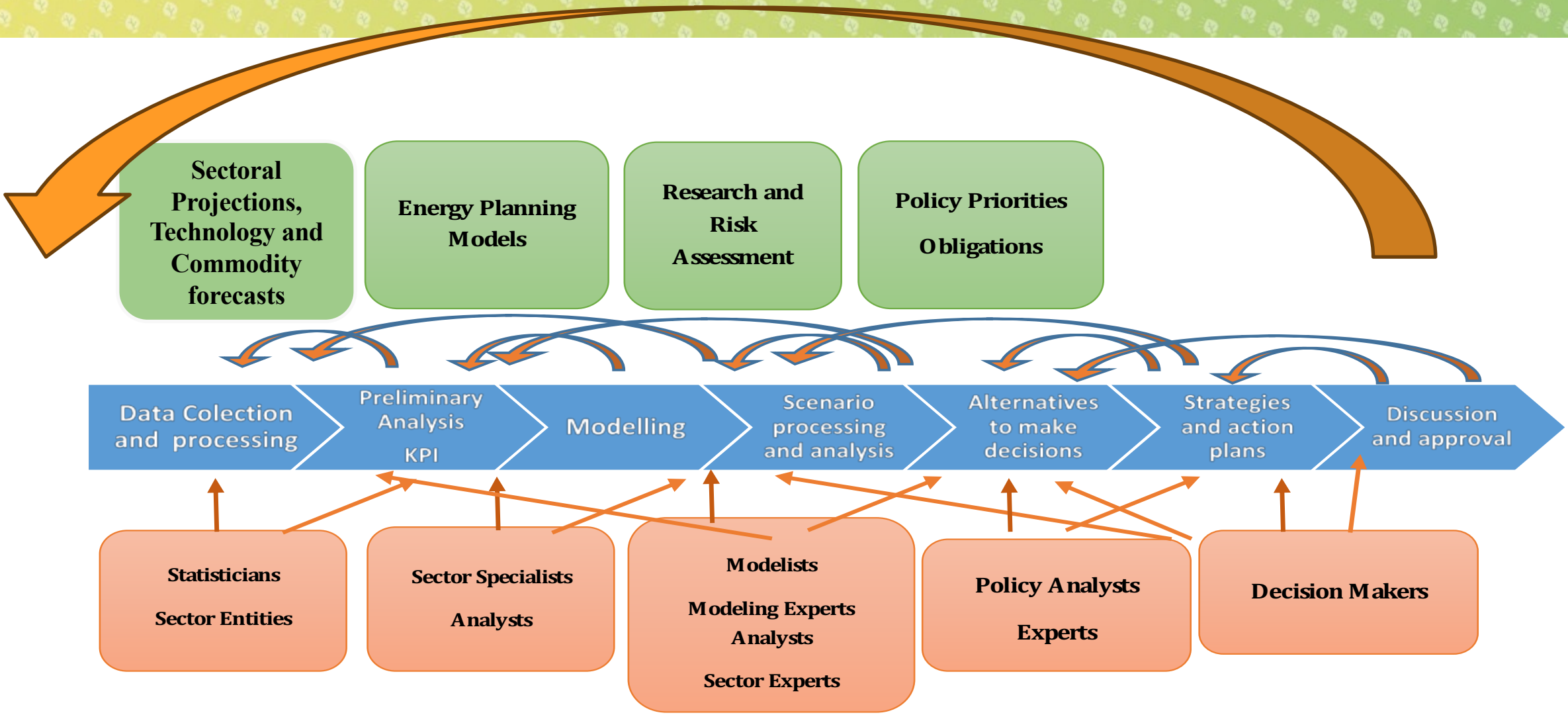
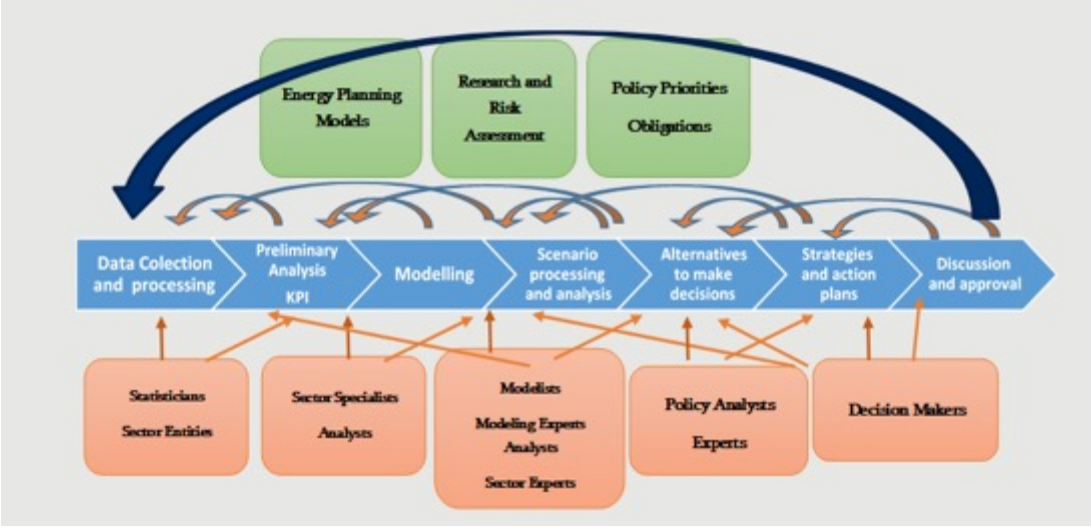
Ideal Planning and Decision-making cycle



Needed Inputs

+ Supply and consumption **Data** +energy sector performance and regimes **Data**
+ Economy and Sectoral **activity projections**
+ Technology and commodity projections - (elasticities, efficiencies, prices, investment costs etc.)
+ Policy visions, priorities, projections, risk assessments
+ Primary analyses - KPIs, measures and their effects
+ Modeling - model configuration, calibration and maintenance
+ Scenario runs scenario analyses and policy briefs
+ Decision Making
+ Policy and action formulation
+ Discussion (internal and public), + Approval
+ Implementation



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NECP Geo. Challenges - Data and input parameters -

- Demand side data absent in some sectors
- Incorrect data and data gaps identified – e.g. transport sector
- Consumption trends in sectors are not surveyed – hard to relate to economic data
- Changes in data regulation and definitions – new targets to be agreed
    - *Pipeline transport was initially not considered, but later included in emissions inventory and energy balance - created a new reality and needs to be coordinated with the new target!!*

New technology data – requires own research

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Common mistakes

- Planning is not only modeling – but much much much more
- Model does not provide predictions and forecasts, but scenarios
- Model does not provide the solutions and recommendations - it is only a tool
- Decisions are made outside models
- Policy makers should not impose the solutions before they look at alternatives should not become the way of smuggling in the projects
- Modeling should be supplemented with more substantial work on growing the analytical and policy capacity
- **Ultimate goal is not to have the best data, or best model, or the best scenario – but to have the best strategic capacity incorporating all the above elements and their interactions**

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Conclusion and Recommendations

- NECP content needs to be adapted to the needs and interests of the Country as the objectives may differ from EU countries
- **NECP preparation planning is:**
  - **Analytical work and coordination**
  - **A thorough communication task else!!!**
    It is a continuous ongoing activity and should be developed as such
- Requires investment - Data Collection, Analytical capacity – people and models, Policy planning capacity, **Time of top officials**
- Develop supply and demand simultaneously - **Find the high-level champion to lead**
- **Answer simple questions with simple tools first**

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NECP process advantages

- Step-up in national policy planning – more focus on policy analysis and quantification to be included in planning model
- Understandable and standard procedure for international players. Could be a possibility to attract funding and technical assistance
- Can be considered as a regional model for cooperation on climate and energy issues
- Demand for data - pushes for better energy statistics and data collection (including on consumption)

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NECP Preparation Advantages

- Harmonization of state strategic documents across sectors for internal use and for international reporting (E.g. UNFCCC)
- Development of analytical capacity and data basis for decision making
- Promotion of investment at national and regional level
- Internal coordination of national institutions
- Facilitating regional coordination, interconnections and common projects
- Securing public consent and support for development projects

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Recommendations for Discussion

Building processes - not only a document

Gradual approach with a moderate pace

Use the high political level support for better coordination of public bodies

Take measures from existing NECPs and adapt them to your country

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