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ROUND TABLE DISCUSSION:

CONCEPTUALISATION OF QUALITY CONTROL FOR ENERGY PERFORMANCE CERTIFICATION OF BUILDINGS AND IMPLEMENTATION ROADMAP IN KYRGYZSTAN

Bishkek,

2024-02-07

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Stantec | intec GOPA International Energy Consultants MEMBER OF GOPA CONSULTING GROUP | ACTED | European University Institute | Robert Schuman Centre for Advanced Studies | FSR ENERGY Florence School of Regulation

AGENDA

1. Conceptualization of the quality control of EPC

2. Implementation Roadmap for the quality control system of EPC

3. Discussion, Q&A *(Report and roadmap provided prior to the round table discussion)*

4. The next steps

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STRUCTURE OF THE ROADMAP

OVERVIEW OF THE LOCAL SITUATION IN KYRGYZSTAN	THE CONCEPTUALIZATION OF QUALITY CONTROL SYSTEM	THE PROPOSED ELEMENTS FOR QUALITY CONTROL FRAMEWORK	THE IMPLEMENTATION ROADMAP
• The legal framework relevant to energy efficiency • Legal framework for energy efficiency of buildings. • Implementation processes for energy certification of buildings. • Institutional setup • Gap analysis of the current local situation	• The process of issuing Energy Performance Certificates (EPCs). • General quality control procedures for EPCs. • Use of quality control results in data analysis and application	• Quality control system elements. • Expert review and site visit procedures. • Enhancements in EPC methodology and assessor qualification	Outlines the **5 stage** implementation plan for Kyrgyzstan's quality control process for Energy Performance Certificates

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CONCEPTUALIZATION OF THE QUALITY CONTROL FOR EPC

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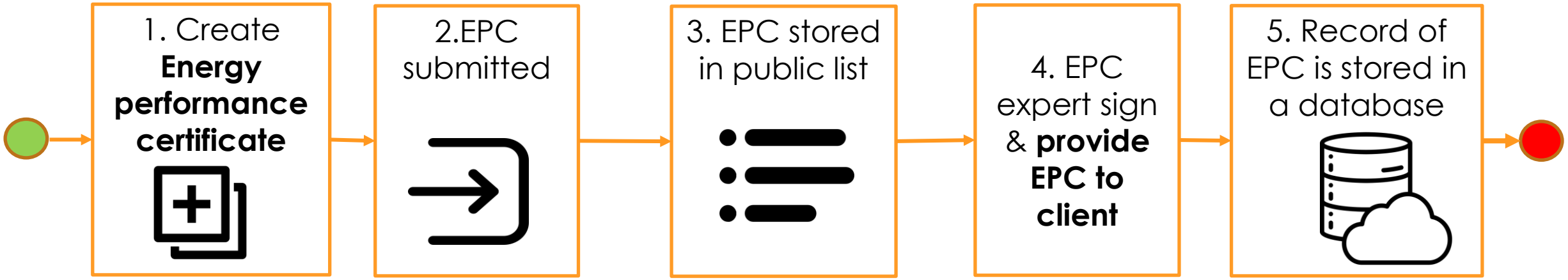
EPC SYSTEM: NO QUALITY CONTROL

There is no quality control clearly expressed in the current system.



Quality monitoring activity according to the LAW?

Quality control is missing in the current system. It is not just about ensuring accuracy; it's about building trust, promoting genuine energy efficiency, and maximising the EPC system's economic, environmental, and social benefits.

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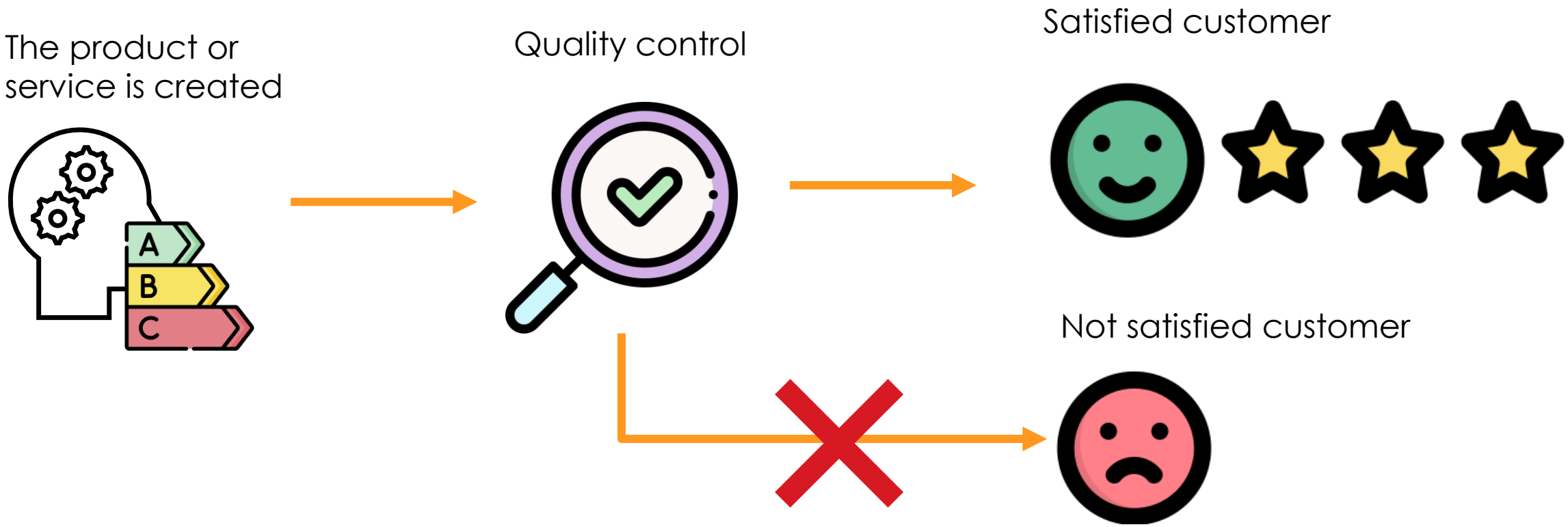
THE PURPOSE OF QUALITY CONTROL



In simple terms – quality control should prevent or at least reduce the number of unsatisfied clients due to poor quality product or service

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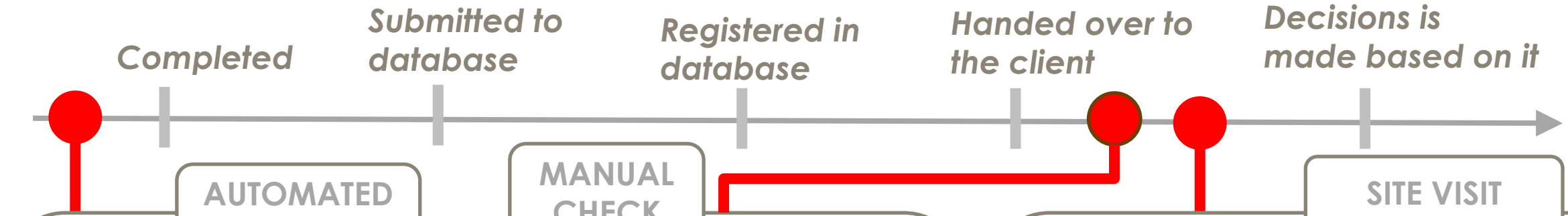
THREE-LEVEL QUALITY CONTROL INTEGRATED IN THE EPC SYSTEM



AUTOMATED VALIDATION

Automated validation is present in the software and evaluates the inputs and missing information

MANUAL CHECK

- The certificates should be selected randomly
- The provided information would be reviewed by the expert
- The EPC assessor is involved if there is a need for clarification

SITE VISIT

- The certificates are selected randomly
- Full information set is requested from the EPC assessor
- The expert evaluator is visiting the site and redoing the EPC
- The feedback is given to EPC Assessor
- The actions are taken if needed

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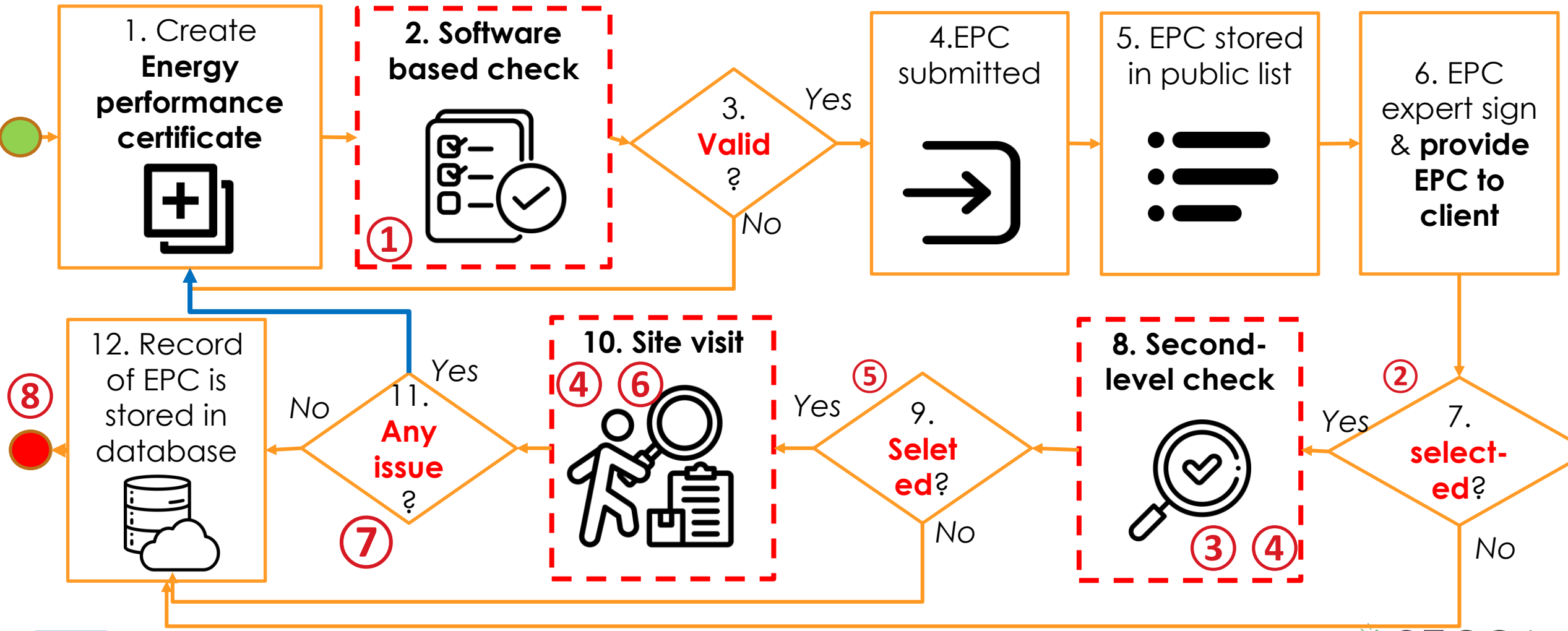
GLOBAL OVERVIEW OF PROPOSAL INTEGRATED IN THE EPC PROCESS



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PROPOSAL: AUTOMATE THE ELIMINATION OF SMALL ISSUES

Automated Validation in EPC Issuing Software

IN THE EPC ISSUING PROCESS:

1. DATA COLLECTION
2. SITE VISIT
3. DATA APPROVAL
4. **DATA INPUTS TO SOFTWARE**
5. CALCULATION
6. RATING ASSIGNMENT
7. RECOMMENDATIONS
8. DOCUMENTATION
9. SUBMISSION

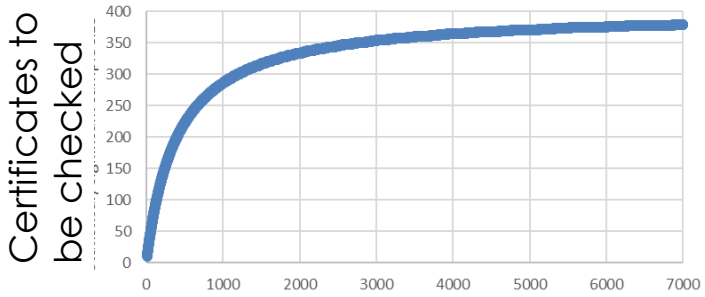
The Principle: to ensure, that small mistakes and missing information are solved before submitting the EPC for the registration

- The set of validation rules must be developed
- The validation rules must be implemented in the software tool

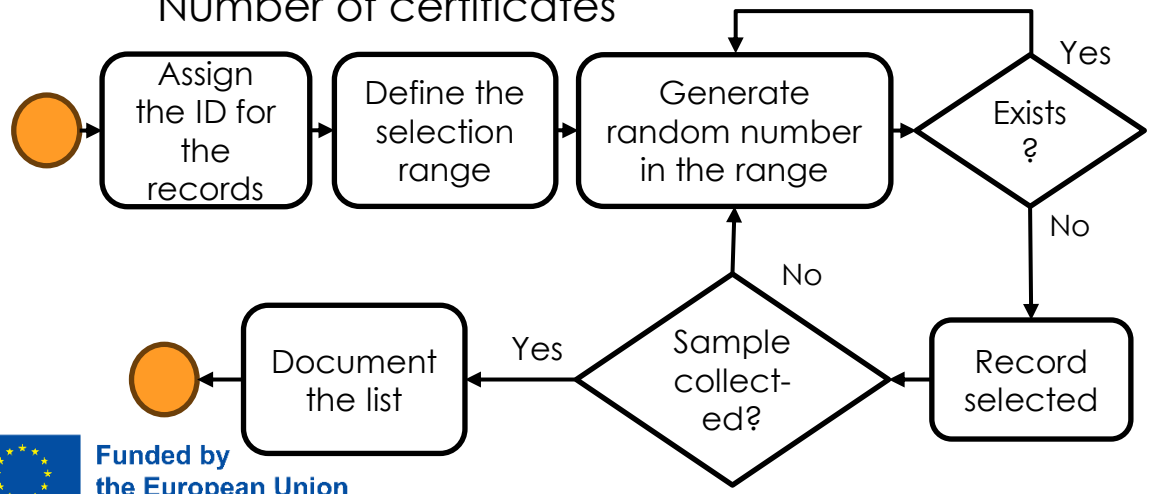
PROPOSAL: TO FOCUS ON RISKS AND MAIN OUTCOMES OF THE ENERGY AUDIT

Selection for Expert Review to Evaluate the Quality of EPC

The principle: *to ensure rational use of resources dedicated to quality control and ensure that obtained results are statistically representative*



1. *Number of EPC to check*
2. *Select specific EPC's*



Expert Review to Evaluate the Quality of EPC

The Principle: *to check the aspects that could not be automatically validated and establish replicable procedure which is has minimal dependency on the evaluator. Assuming that on-site collected information is correct*

Checklist for the aspects to be covered in the manual checking procedure has to be established

Internal procedures have to be established:

- Assign the evaluation expert
- How to perform quality checking
- Communicate with the EPC assessor and request additional information if needed
- How to proceed if EPC assessors are not collaborating

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PROPOSAL: INVESTIGATE ON-SITE WHEN NEEDED AND RESONABLE

Selection for Site Visit

The Principle: *to ensure rational use of resources dedicated for time consuming site visits and ensure that obtained results are statistically representative*

Random Sampling:

OR Risk-Based Selection:

- *Low quality of initial check*
- *Lack of clarity in the provided information*
- *other risks*

Quality Evaluation During the On-Site Visit

The Principle: *to check the aspects that could not be automatically validated or checked without visiting the site. It will establish a replicable procedure which has a minimal dependency on the evaluator.*

Tasks initially performed by EPC assessor:	Tasks performed by evaluation expert:
1. DATA COLLECTION	1. DATA COLLECTION
2. SITE VISIT	2. SITE VISIT
3. DATA APPROVAL	
4. DATA INPUTS TO SOFTWARE	
5. CALCULATION	5. CALCULATION
6. RATING ASSIGNMENT	6. RATING ASSIGNMENT
7. RECOMMENDATIONS	7. RECOMMENDATIONS
8. DOCUMENTATION	
9. SUBMISSION	

Evaluation expert:

- Recreates EPC
- Compares the differences
- Identifies possible causes
- Gives a conclusion

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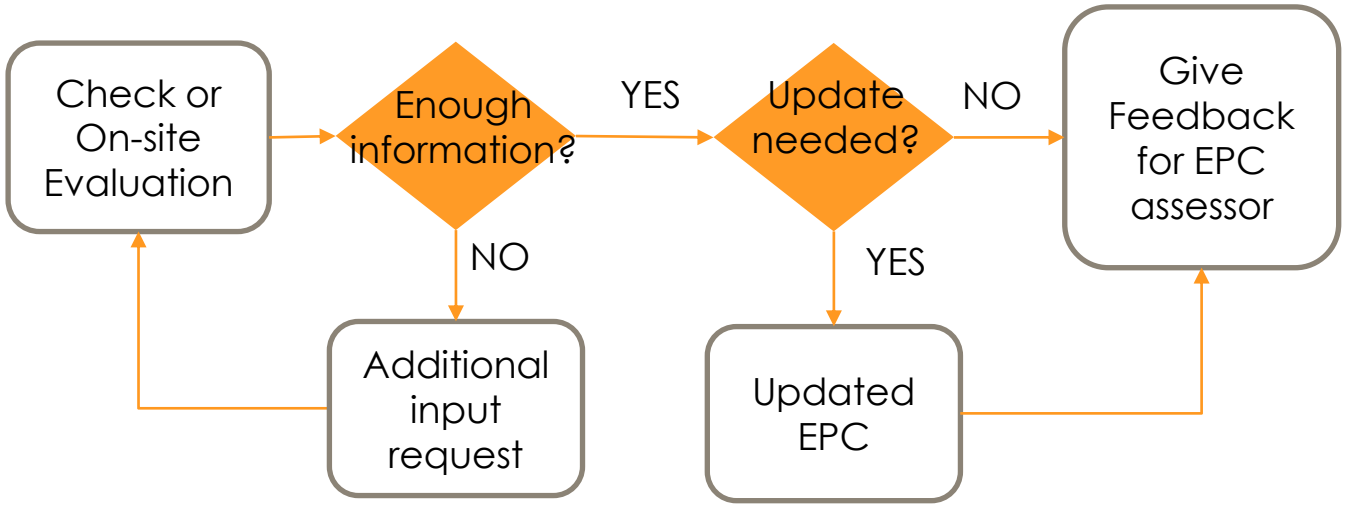
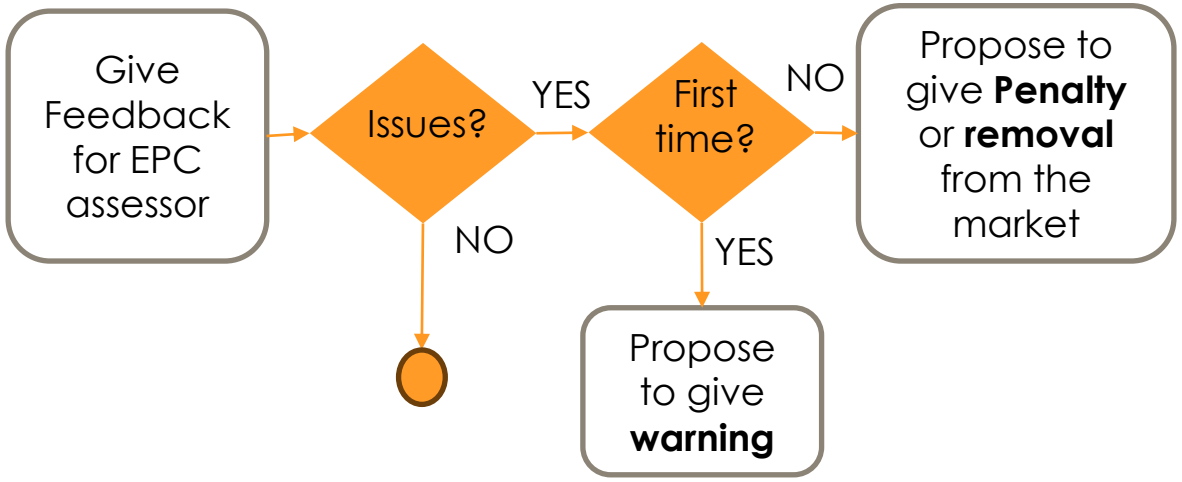
PROPOSAL: USE THE PROCESS DATA TO DRIVE IMPROVEMENT OF THE QUALITY

Feedback and Actions After Checking

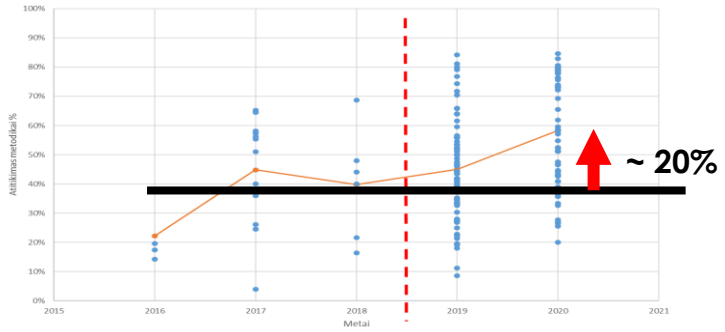


Warnings and Sanctions



Aggregation of Quality Control Process Generated Data

$$QSI = \frac{\text{Satisfied criteria}}{\text{Number of criteria}}$$



- *Measuring Market Quality Level*
- *Identifying Common Issues*
- *Identify EPC assessors Knowledge Gaps*
- *Find recommendations for Improvement of methodology*

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IMPLEMENTATION ROADMAP

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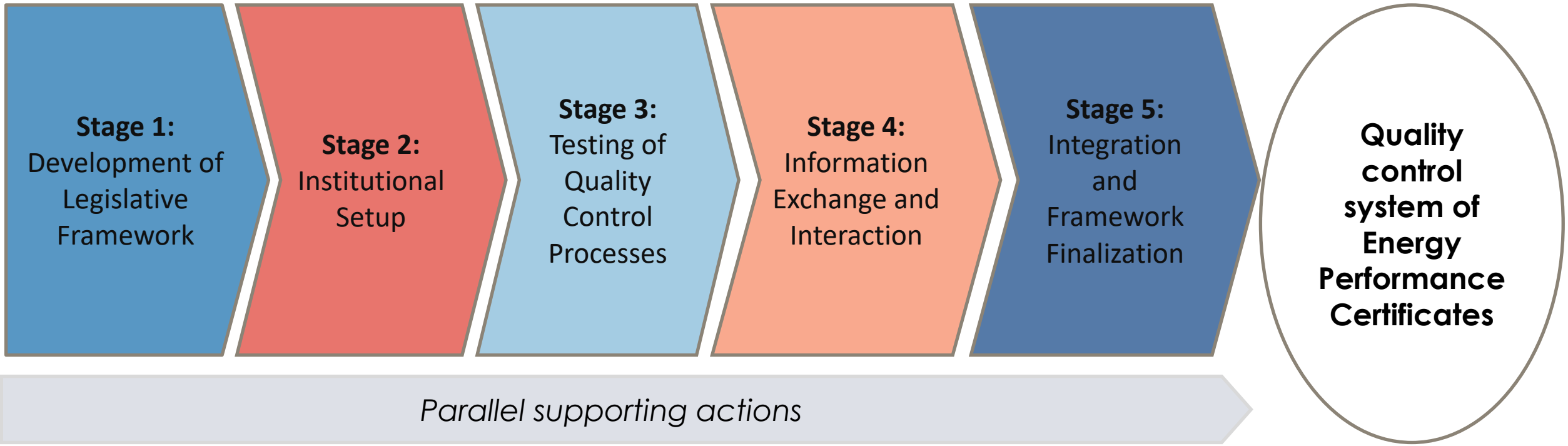
PRINCIPLES OF THE ROADMAP



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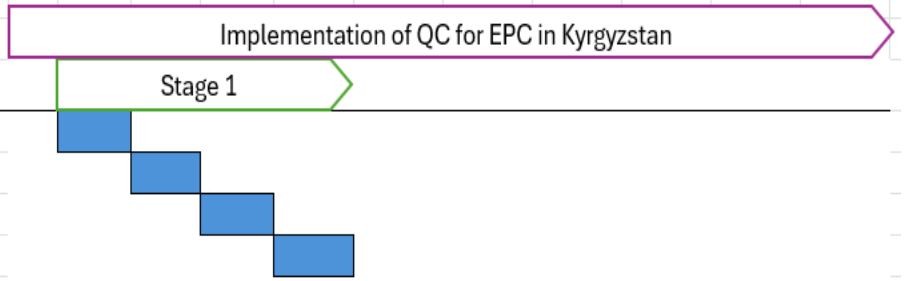
STAGE 1: DEVELOPMENT OF LEGISLATIVE FRAMEWORK

Stage 1: crafting the legal foundation for energy performance certification, defining the technical specifications for quality control process

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		**12-16 months**
Stage 1: Development of Legislative framework		**6-8 months**
1.1. Preparing technical draft of the bylaw	Int and local experts	
1.2. Preparation of legal draft of the bylaw	Legal expert	
1.3. Stakeholder consultation	Ministry of Energy	
1.4. Submitting the legal draft for approval to the Government	Ministry of Energy	



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STAGE 1: DEVELOPMENT OF LEGISLATIVE FRAMEWORK

Stage 1: crafting the legal foundation for energy performance certification, defining the technical specifications for quality control process

1. **Preparing a Technical Draft of the Bylaw**:
    1. Blueprint with technical specifications and standards.
    2. Interdisciplinary team for technical accuracy.
2. **Preparation of Legal Draft of the Bylaw**:
    1. Translating technical specifics into legal terms.
    2. Collaboration of legal and technical experts.
3. **Stakeholder Consultation**:
    1. Engaging property developers, environmental groups, and public sector.
    2. Vital for support and refining the bylaw.
4. **Submitting the Legal Draft for Government Approval**:
    1. Final step in the approval process.
    2. Navigating political landscape for endorsements.

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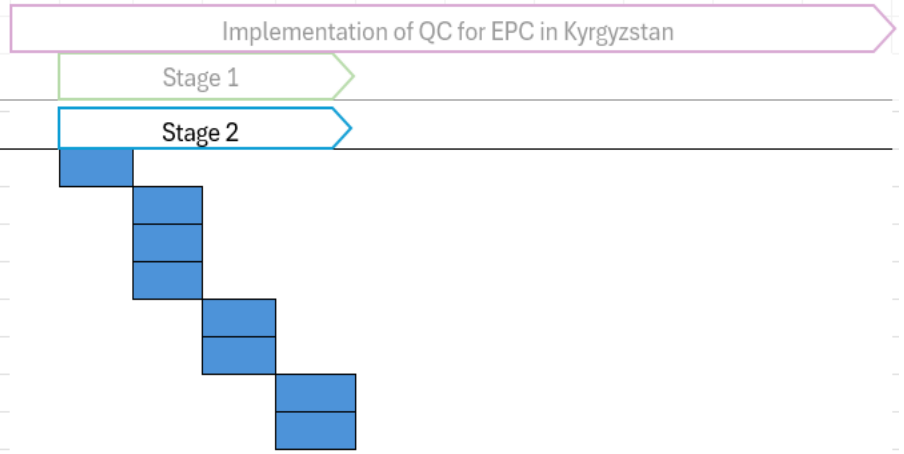
STAGE 2: INSTITUTIONAL SETUP

Stage 2: establishing the organizational structure and roles necessary for implementing the energy performance certification process, including training and capacity building for key stakeholders.

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		12-16 months
Stage 1: Development of Legislative framework		6-8 months
Stage 2: Institutional setup		**6 months**
2.1. Assesment of current capacities and training needs in the Institute of Energy	Int and local experts	
2.2. Establishment of the general internal processes in the Institute of Energy	Int and local experts	
2.3. Developing the selection procedure of EPC for Expert review	Institite of Energy, Int & local experts	
2.4. Establishment of data exchange procedure between Institute of Energy and Gosstroy	Institute of Energy, Gosstroy, Ministry of Energy	
2.5. Developing expert Review procedure to Evaluate the Quality of EPC	Institite of Energy, Int & local experts	
2.6. Development of procedures for Aggregation of QC Process Generated Data	Institite of Energy, Int & local experts	
2.7. Development of selection procedure for Site Visit	Institite of Energy, Int & local experts	
2.8. Development of site Visit procedure to Evaluate the Quality of EPC	Institite of Energy, Int & local experts	



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STAGE 2: INSTITUTIONAL SETUP

Stage 2: establishing the organizational structure and roles necessary for implementing the energy performance certification process, including training and capacity building for key stakeholders.

2.1. **Assessment of Capacities and Training Needs**:
•Evaluation of the Institute of Energy's capabilities.
•Identification of training requirements for EPC quality management.
2.2. **Establishment of Internal Processes**:
•Developing robust protocols for EPC workflow.
•Ensuring consistency and transparency.
2.3. **Developing EPC Selection for Expert Review**:
•Crafting meticulous selection process for EPC quality control.
2.4. **Data Exchange Procedure with Gosstroy**:
•Implementing a protocol for information sharing and collaboration.

2.5. **Expert Review Procedure for EPC Quality Evaluation**:
•Setting standards for EPC quality assessment.
2.6. **Aggregation of QC Process Data**:
•Formulating procedures for data insights and system improvement.
2.7. **Development of Site Visit Selection Procedures**:
•Establishing criteria for conducting and validating site visits.
2.8. **Site Visit Procedure for EPC Quality Evaluation**:
•Refining processes for physical inspection alignment with EPC data.

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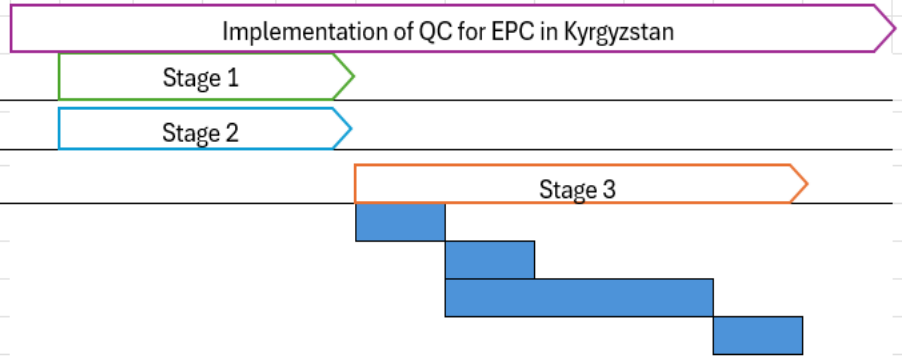
STAGE 3:TESTING OF QUALITY CONTROL PROCESSES

Stage 3: conducting pilot tests and field trials to evaluate and refine the quality control mechanisms for the energy performance certification process, ensuring its efficacy and reliability.

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		**12-16 months**
Stage 1: Development of Legislative framework		**6-8 months**
Stage 2: Institutional setup		**6 months**
Stage 3: Testing of the Quality Control process		**6-8 months**
3.1. Pilot case (small scale) test of the QC process and procedures	Institite of Energy	
3.2. Review and adjustment of established procedures based on the Pilot case	Institite of Energy, Int & local experts	
3.3. Field testing of the QC process	Institite of Energy	
3.4. Review and adjustment of established procedures based on the Field test	Institite of Energy, Int & local experts	



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STAGE 3: TESTING OF QUALITY CONTROL PROCESSES

Stage 3: conducting pilot tests and field trials to evaluate and refine the quality control mechanisms for the energy performance certification process, ensuring its efficacy and reliability.

3.1. **Pilot Case Test of QC Processes**:

- Conducting a small-scale pilot to assess QC process efficacy.
- Informing adjustments for process optimization.

3.2. **Review and Adjustment Post-Pilot**:

- Refining procedures based on pilot insights.
- Ensuring resilience and adaptability of the system.

3.3. **Field Testing of QC Process**:

- Expanding testing to larger scale for diverse conditions.
- Critical for comprehensive system validation.

3.4. **Review and Adjustment Post-Field Test**:

- Analyzing field test results for further procedure refinement.
- Establishing a continuous feedback loop for EPC framework development.

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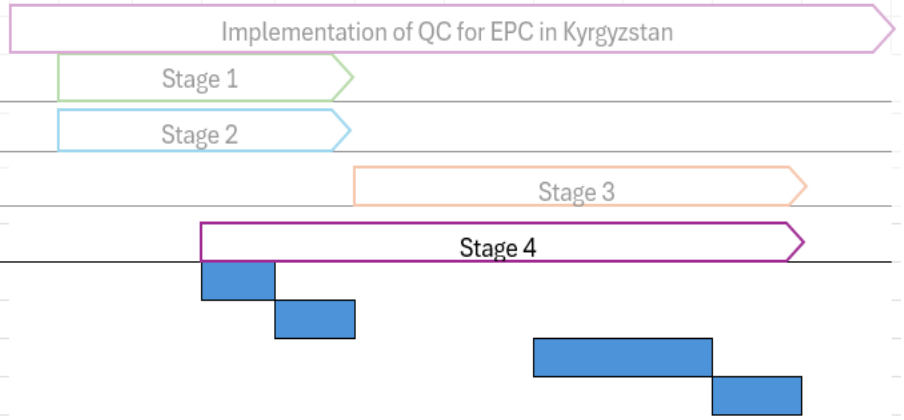
STAGE 4: INFORMATION EXCHANGE AND INTERACTION

Stage 4: the development of effective communication and data exchange protocols between different stakeholders, enhancing collaboration and ensuring the smooth operation of the certification process

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		12-16 months
Stage 1: Development of Legislative framework		6-8 months
Stage 2: Institutional setup		6 months
Stage 3: Testing of the Quality Control process		6-8 months
Stage 4: Information exchange and interaction		**4-6 months**
4.1. Developing procedure for feedback and Actions After Checking	Gosstroy, Institute of Energy, Ministry of Energy	
4.2. Developing procedure of Warnings and Sanctions for EPC Assessors	Gosstroy, Ministry of Energy	
4.3. Testing and reviewing the interaction with EPC assessors	Gosstroy, Ministry of Energy	
4.4. Ensure that QC findings are integrated into initial training and continued training activities	Gosstroy, Ministry of Energy	



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STAGE 4: INFORMATION EXCHANGE AND INTERACTION

Stage 4: the development of effective communication and data exchange protocols between different stakeholders, enhancing collaboration and ensuring the smooth operation of the certification process

4.1. **Procedure for Feedback and Actions Post-Checking**:
- Establishing a feedback system for post-EPC assessment actions.
- Informing assessors of outcomes and follow-ups.

4.2. **Warnings and Sanctions for EPC Assessors**:
- Creating a disciplinary framework for assessors.
- Outlining procedures for non-compliance consequences.

4.3. **Testing and Reviewing Assessor Interactions**:
- Rigorous testing and review of assessor interaction protocols.
- Ensuring effective support and input incorporation.

4.4. **Integration of QC Findings into Training**:
- Prioritizing QC insights for training activities.
- Facilitating continuous professional and system development.

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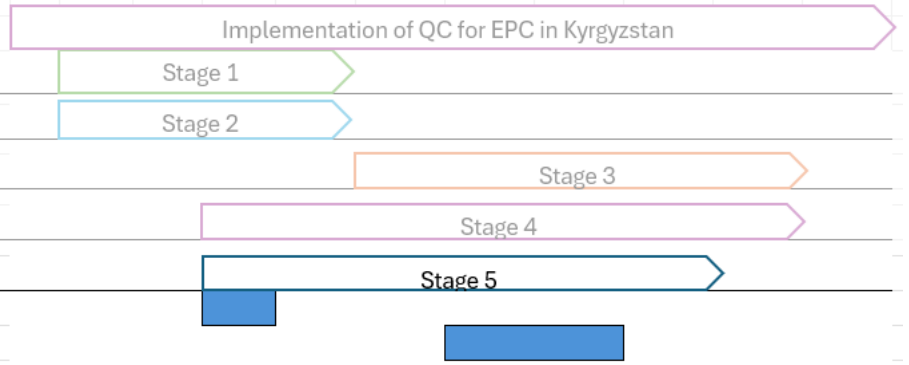
STAGE 5: INTEGRATION AND FRAMEWORK FINALIZATION

Stage 5: integrating feedback from earlier stages, finalizing the overall framework, and implementing a robust and comprehensive energy performance certification system.

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		12-16 months
Stage 1: Development of Legislative framework		6-8 months
Stage 2: Institutional setup		6 months
Stage 3: Testing of the Quality Control process		6-8 months
Stage 4: Information exchange and interaction		4-6 months
Stage 5: Integration and Framework Finalization		**2-3 months**
5.1. Development of automated checking rules for the Software tool	Institite of Energy, Int & local experts	
5.2. Development of Automated Validation in EPC Issuing Software	Gosstroy, IT contractor	



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STAGE 5: INTEGRATION AND FRAMEWORK FINALIZATION

Stage 5: integrating feedback from earlier stages, finalizing the overall framework, and implementing a robust and comprehensive energy performance certification system.

5.1. **Automated Checking Rules for Software Tool**:

- Implementing automated rules in EPC software.
- Enhancing efficiency, reducing errors, ensuring compliance.

5.2. **Automated Validation in EPC Issuing Software**:

- Integrating an automated validation system in EPC software.
- Providing quality assurance and verifying data accuracy before issuance.

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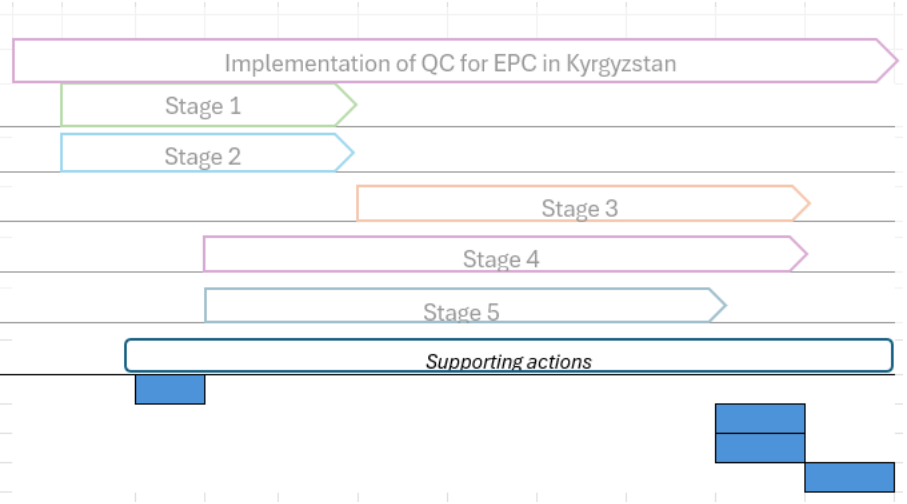
SUPPORTING PARALLEL ACTIONS

Supporting Actions: To reinforce the QC system, ensuring comprehensive support and alignment with objectives throughout the implementation process.

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		12-16 months
Stage 1: Development of Legislative framework		6-8 months
Stage 2: Institutional setup		6 months
Stage 3: Testing of the Quality Control process		6-8 months
Stage 4: Information exchange and interaction		4-6 months
Stage 5: Integration and Framework Finalization		2-3 months
Supporting parralel actions:		
6.1.Establish Key Performance Indicators (KPIs):	Ministry of Energy, Institute of Energy, Gosstroy	
6.2.Collect and analyse feedback about the process	Institite of Energy, Int & local experts	
6.3. Analysis of the selected data and reporting actions	Institite of Energy, Int & local experts	
6.4. Adjustment of existing process based on observed issues	Institute of Energy, Gosstroy, Ministry of Energy	



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SUPPORTING PARALLEL ACTIONS

Supporting Actions:

1. **Develop Key Performance Indicators (KPIs)**:
    - Formulate measurable KPIs for each stage, focusing on EPC accuracy, certificate issuance time, and stakeholder satisfaction.
2. **Feedback Loops**:
    - Establish feedback mechanisms for stakeholder insights, including from assessors, building owners, and policy implementers.
3. **Regular Reporting and Analysis**:
    - Implement a reporting system to analyze data from KPIs, highlighting progress and identifying improvement areas.
4. **Adjustment Mechanism**:
    - Create a process for adjustments based on monitoring and evaluation, ensuring adaptability to challenges and opportunities.

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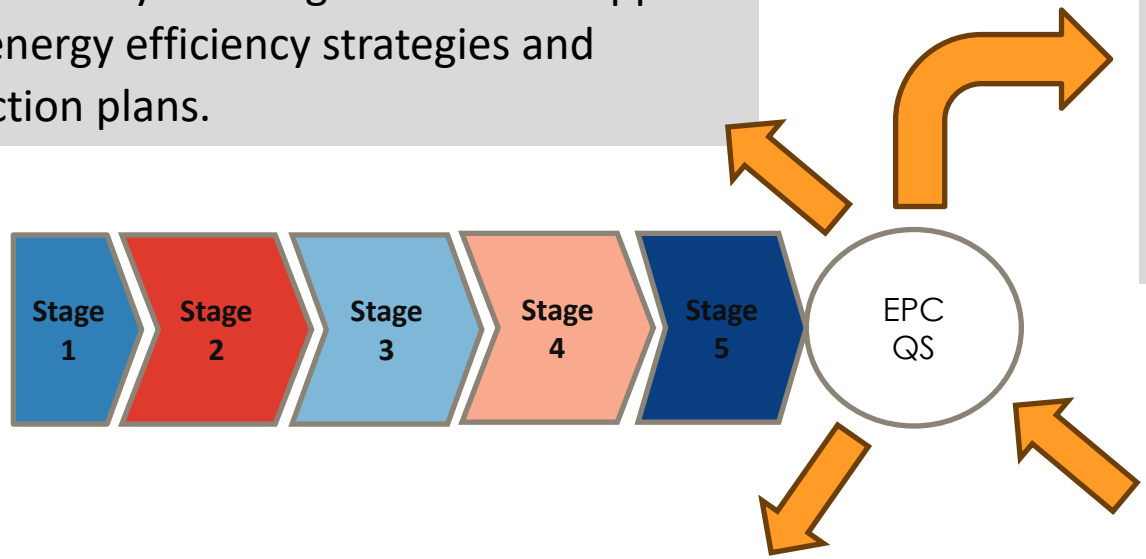
INTEGRATION WITH BROADER POLICY GOALS

Alignment with National Energy Strategies: Ensure the EPC system aligns with and supports national energy efficiency strategies and climate action plans.

Educational and Awareness Initiatives: Leverage the EPC system as a platform for broader educational and awareness initiatives, promoting energy conservation and sustainable living practices among the public.



Driving Sustainable Development: Position the EPC system as a key tool in driving sustainable development in the real estate sector, encouraging energy-efficient construction and renovation.

International Collaboration: Explore opportunities for international collaboration and knowledge exchange to continually enhance the EPC system and align it with global best practices.

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DISCUSSION

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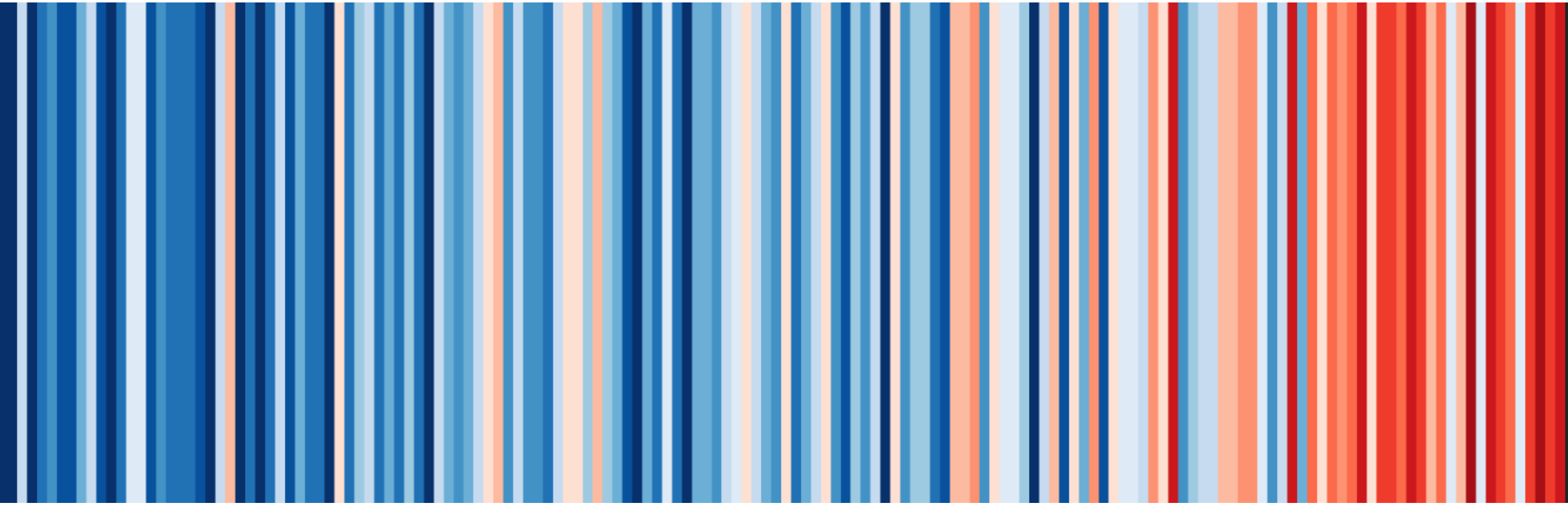

NEXT STEPS

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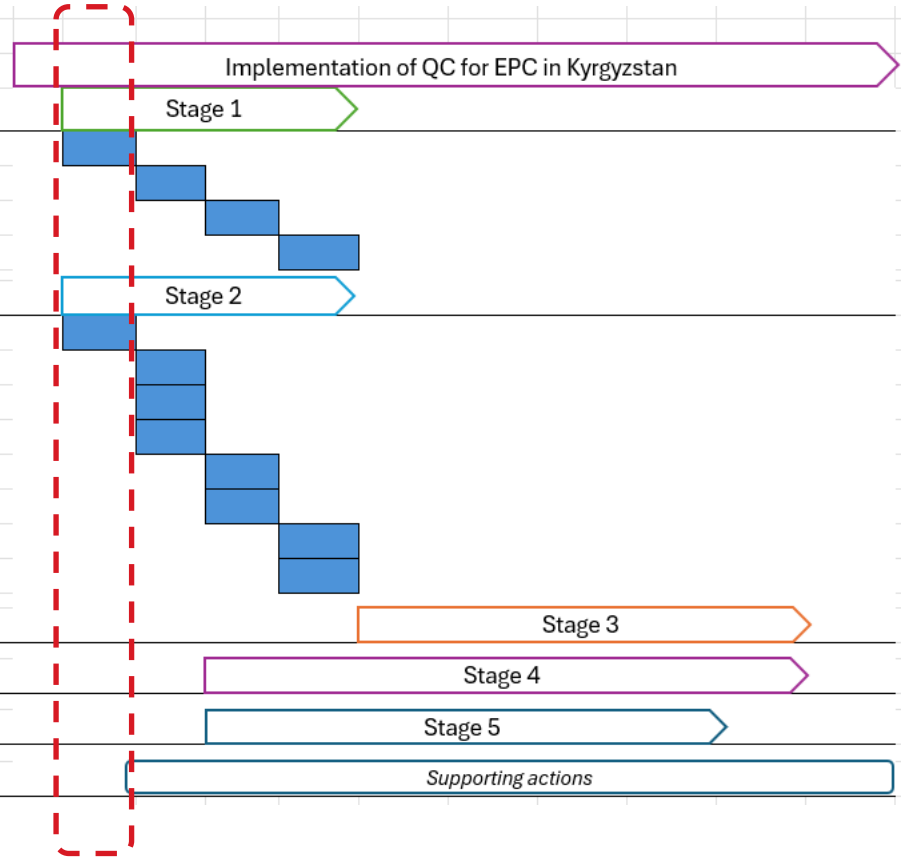
THE ENDING OF THIS PHASE

WBS	Task	Who	When
1.1	Development of an **overview of a legal and institutional framework**	Expert in EEiB	Mid -September
1.2.1	**Preparation** for workshop to local stakeholders in Kyrgyzstan	Lead Expert in EA & EPC Assisted by Expert in EEiB	Till 1st October
1.2.2	**Workshop for local stakeholders in Kyrgyzstan**	Lead Expert in EA & EPC	Week of 2nd October
1.3.1	Inputs to the report on the conceptualization of the EPCs quality assurance framework in Kyrgyzstan	Expert in EEiB	Till Mid November
1.3.2	**A Report on the conceptualization of the EPCs quality assurance system**	Lead Expert in EA & EPC Assisted by Expert in EEiB	December 2023
1.4.1	Inputs to a Road Map	Expert in EEiB	Till Mid November
1.4.2	**Road Map for *the EPCs quality assurance framework* in Kyrgyzstan**	Lead Expert in EA & EPC Assisted by Expert in EEiB	December 2023
1.5	**Round table discussion** to **present and discuss the Report and Road Map**	Lead Expert in EA & EPC	February 2024
M	***Preparation of final deliverables***	Lead Expert in EA & EPC Assisted by Expert in EEiB	Latest March 2024

UPCOMING STEPS

WHAT	WHO	HOW LONG
Implementation of Quality control for Energy Performance Certification in Kyrgyzstan		**12-16 months**
Stage 1: Development of Legislative framework		**6-8 months**
1.1. Preparing technical draft of the bylaw	Int and local experts	
1.2. Preparation of legal draft of the bylaw	Legal expert	
1.3. Stakeholder consultation	Ministry of Energy	
1.4. Submitting the legal draft for approval to the Government	Ministry of Energy	
Stage 2: Institutional setup		**6 months**
2.1. Assesment of current capacities and training needs in the Institute of Energy	Int and local experts	
2.2. Establishment of the general internal processes in the Institute of Energy	Int and local experts	
2.3. Developing the selection procedure of EPC for Expert review	Institite of Energy, Int & local experts	
2.4. Establishment of data exchange procedure between Institute of Energy and Gosstroy	Institute of Energy, Gosstroy, Ministry of Energy	
2.5. Developing expert Review procedure to Evaluate the Quality of EPC	Institite of Energy, Int & local experts	
2.6. Development of procedures for Aggregation of QC Process Generated Data	Institite of Energy, Int & local experts	
2.7. Development of selection procedure for Site Visit	Institite of Energy, Int & local experts	
2.8. Development of site Visit procedure to Evaluate the Quality of EPC	Institite of Energy, Int & local experts	
Stage 3: Testing of the Quality Control process		**6-8 months**
Stage 4: Information exchange and interaction		**4-6 months**
Stage 5: Integration and Framework Finalization		**2-3 months**
Supporting parralel actions:		



1.1. Preparing a technical draft of the bylaw

2.1. Assessment of the current capacities and training needs in the Institute of Energy

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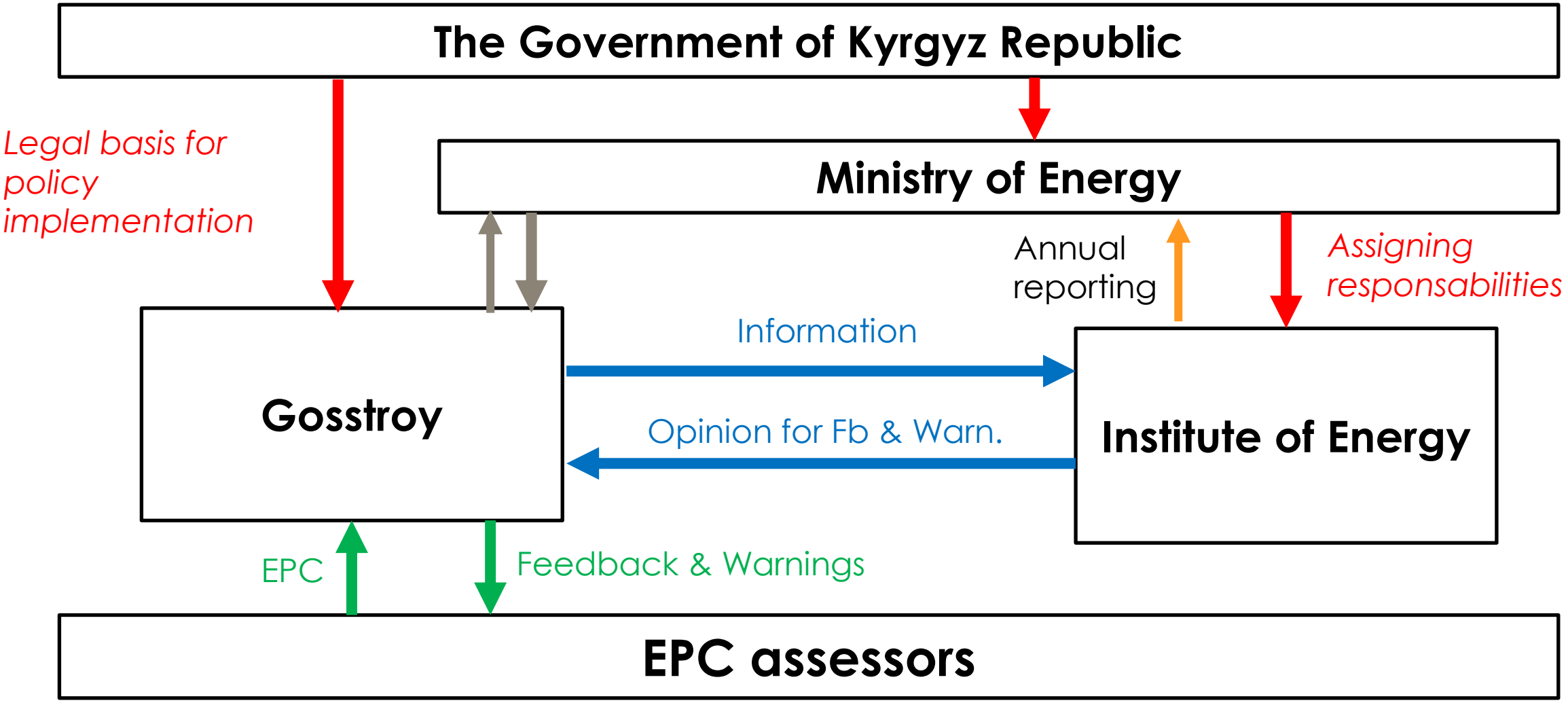
DESIGN OF THE INTERACTION BETWEEN THE INSTITUTIONS AND STAKEHOLDERS



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UPCOMING: PREPARING A TECHNICAL DRAFT OF THE BYLAW

Proposed elements of the bylaw:

Legal Basis for Policy Implementation and references: Description of the authority under which the bylaw is enacted, including its alignment with national laws and relevant international best practices.

Roles and Responsibilities: Detailed responsibilities of each institution, including their role in providing feedback, warnings, and information flow.

EPC Assessment Process:
- Procedures for EPC assessors to create and submit certificates.
- The basis for information exchange in the process
- Process by which Gosstroy and the Institute of Energy interact regarding feedback and warnings.

Quality Control and Enforcement
- Explanation of the software-based check and the conditions under which a second-level check is initiated.
- Protocols for site visits, including how feedback is provided to EPC assessors.

Monitoring and Reporting
- The process for monitoring the implementation of the bylaw.
- Reporting structure and frequency of reports to the Ministry of Energy.

Compliance and Penalties
- Detailed sanctions for non-compliance with the bylaw.
- Corrective actions for non-conforming EPCs.

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UPCOMING: ASSESSMENT OF THE CURRENT CAPACITIES AND TRAINING NEEDS IN THE INSTITUTE OF ENERGY

Assessment of Current Capacities:
Determine the current capabilities of the Institute of Energy in terms of staff expertise, tools, and processes in place. This includes understanding the existing knowledge and skills related to EPC quality control

Gap Analysis:
Compare the current capacities with the required competencies highlighted in the quality control framework. Identify gaps in knowledge, skills, technology, and processes.

Training and development plan:

- To address needed skills and knowledge about EPC quality control.
- Plan the development of the data storage and analytics

Establishment of Internal Processes:

•Developing robust protocols for EPC workflow.

•Ensuring consistency and transparency in the process

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THANK YOU FOR YOUR ATTENTION!

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