

# Exploring What If Modelling and Policy Tracking through Digitalized UNFC



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# The problems

**Legislations and policy formulation are essential toward the green transition and sustainable resource development.**

**Accessing and analyze data on existing resource projects, policies and laws are challenging.**

**The existing data and classifications are scattered across deprecated repositories and inconsistent standards.**

**This fragmented landscape impedes the development of ambitious strategies for the future.**

# Informed policy formulation

**Robust standards, coupled with robust digitalization support, offer the following benefits:**

- Data harmonization
- Distributed information repositories
- Digitalized policy tracking
- What if modelling
- The use of Machine Learning and AI

Collectively, these contribute to **Informed Policy Formulation.**



# Data harmonization

**Comprehensive digitalization, coupled with cutting edge technology, can play a pivotal role in enhancing the harmonization and adherence to UNFC rules and principles, encompassing both general and specific disclosure regulations as well as competency and credibility standards.**

**Guided reporting system** ensures adherence to UNFC rules, tailored to various commodities.

**Control Framework** technology offers customizable automated validation of reports.

## Control Framework



English



MENU

Project Dashboard

Sites

SDM

National Aggregates

ADMINISTRATION

Admin Dashboard

System message

There is a new Control Factor added to the system since last save. Please find all items marked as "New Control Factor" and select value before save.

Control Framework E Axis

Maximum E-axis value: E 1.0

Regulatory Approval	Name	Value
Access to market	EIA permits	<input checked="" type="radio"/> Been approved - E 1 <input type="radio"/> Not been approved - E 3.2
Economic	Mining waste permits	<input checked="" type="radio"/> Been approved - E 1 <input type="radio"/> Not been approved - E 3.2
Social considerations	Environmental and Social Impact Assessment (ESIA)	<input checked="" type="radio"/> Been approved - E 1 <input type="radio"/> Not been approved - E 3.2
Environmental considerations		
Policy		
Exploration Rights (Early and advanced Exploration)		
Mining Rights		
Exploration Permits		
Extraction Permit		

Save < Back

# The case study

**We have set up a case study:**

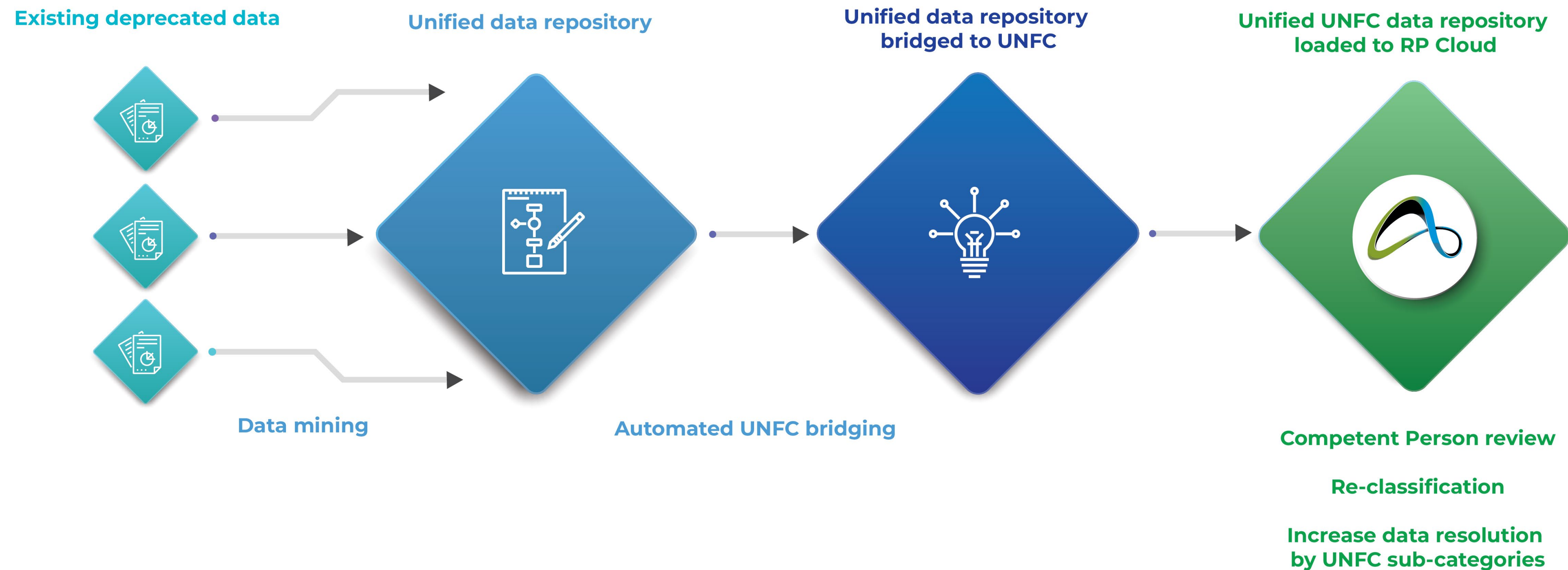
- **19 real life case studies from around the globe**
- **20 real life UNFC report from these case studies**
- **5 real life CRIRSCO reports bridged to UNFC**
- **84 generated report to increase the resolution of the modelling**

# UNFC Data Bridging

Automated conversion of the 5 CRIRSCO reports to UNFC following the rules of the official UNECE Bridging documents

Re-classification to UNFC sub-categories and sub-classes to classify projects more in-depth increasing the resolution of the project maturity model.

Extracting Control Factors from disclosure and supporting documents.



# Policy tracking

## Policy tracking:

Through our Supported Decision Making (SDM) module, stakeholders can access crucial information regarding the viability and maturity of projects.

The SDM module highlights exact factors hindering project viability and maturity, such as:

- regulatory hurdles
- approval delays
- financial constraints

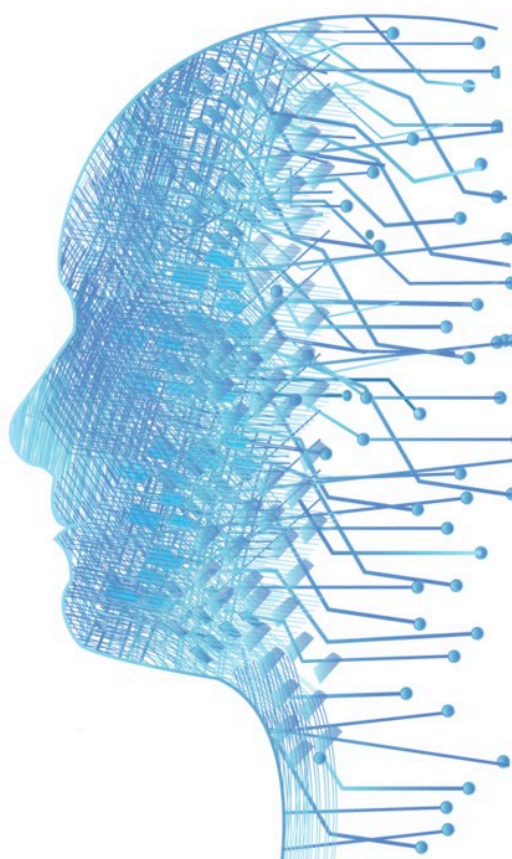


# Ask the machine for information

By harmonizing and structuring data, we empower the machine to identify the precise factors impeding our projects.

Thus, we tasked the system to pinpoint the top three major factors, yielding precise answers:

- **Regulatory approval process**
- **Environmental and Social Impact Assessment (ESIA) approval**
- **Taxation issues**



# What if modelling

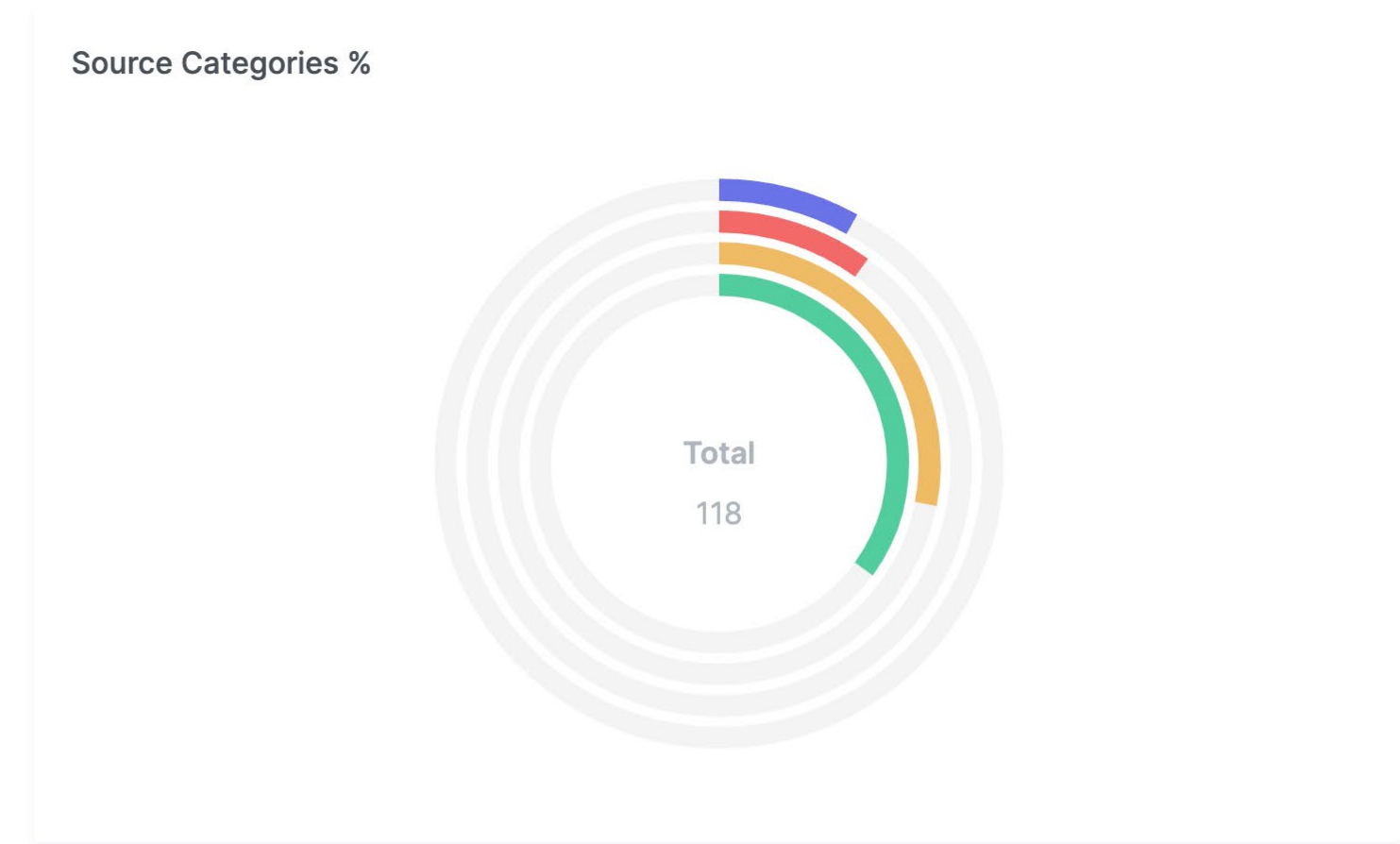
## What if modelling:

In anticipation of government policy changes aimed at supporting the industry, the Control Framework system allows for the incorporation of planned modifications into advanced assessments. This entails updating the system with the proposed policy adjustments.

After we get our answers we have updated the system and Control Framework with the proposed policy adjustments.

Following this update, the SDM module facilitated What-If modeling scenarios to forecast potential outcomes.

# The results



UNFC Change Matrix  
Commodity: Minerals

ESE Viability / Feasibility		F1			F2			F3			F4
Categories	Subcategories	F 1.1	F1.2	F1.3	F 2.1	F2.2	F2.3	F 3.1	F3.2	F3.3	-
E1		Opening: 30 Closing: 41 Change: +11		Opening: 60 Closing: 49 Change: -11							
E2					Opening: 19 Closing: 19 Change: 0						
E3	E3.2										
	E3.3										

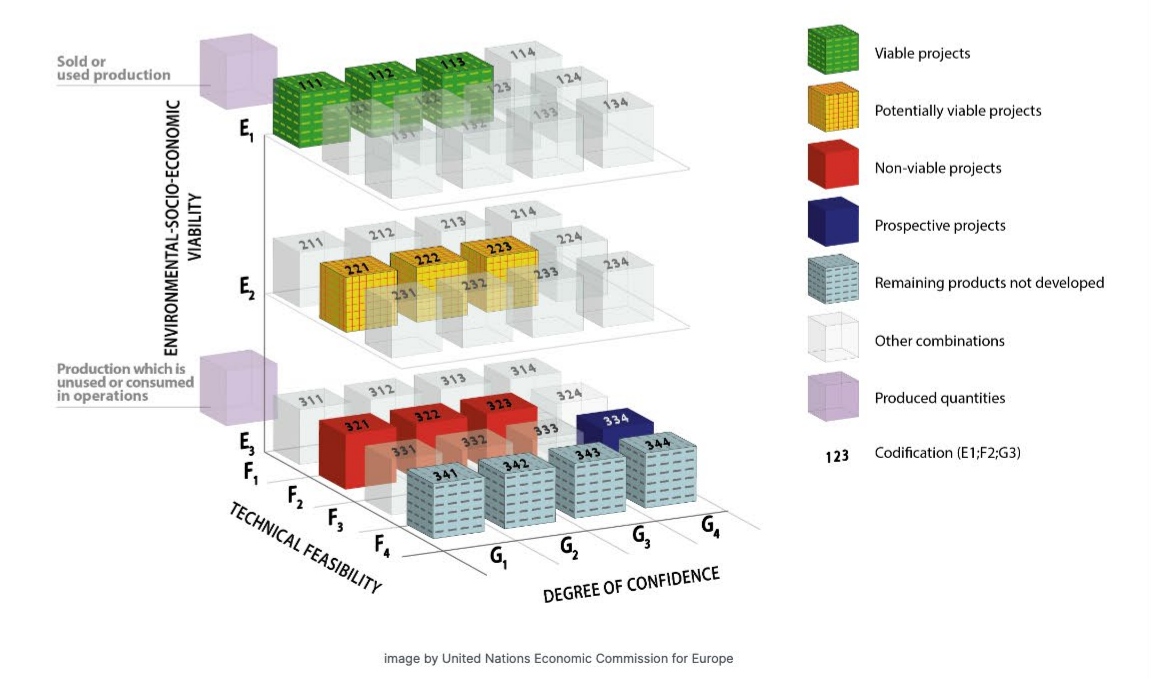


Image by United Nations Economic Commission for Europe

# What's next?

**Classification systems like UNFC, AMREC/PARC, CRIRSCO, and others include extensive data in their supporting documents.**

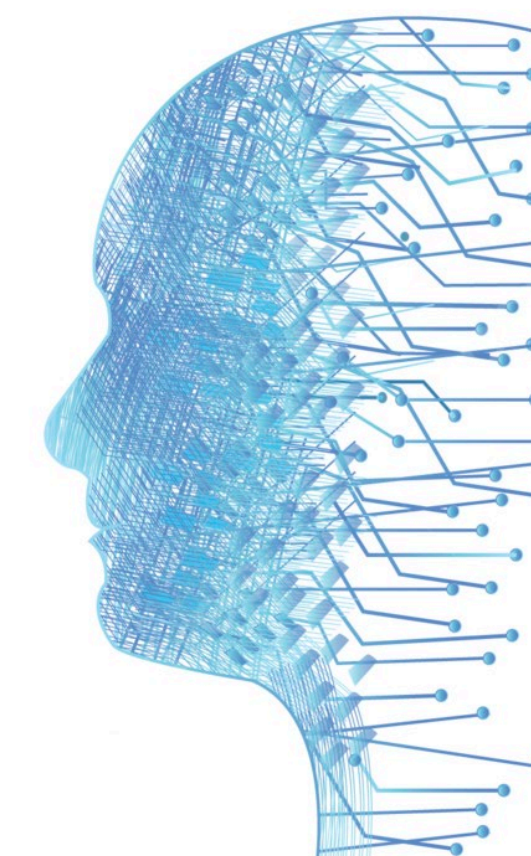
**However, this data is mostly stored in unstructured, large-text formats within these documents.**

**Extract data with Machine Learning** - we are leveraging and building Machine Learning models for extracting information from these data sources.

**Natural language search** – With the help of the AI the supporting documents and data can be searched without exact keywords.

**Data Classification and Structuring** - Our focus lies in training models designed to extract and organize data from extensive textual sources.

**Increasing the scope of the study** – We are working to gather and process more real life scenarios and sources to analyze as much global hindering factors as possible.



# A magic mirror

To increase the scope of our study and data we have built a National Aggregates module, providing a unique tool for overseeing country resource profiles.

It functions as a "magic mirror," allowing countries to easily visualize their resource portfolio and compare various scenarios.

This functionality enables high-level oversight at an accelerated pace, particularly in regions where national project level UNFC reports are not yet established.

**Country Profile - Hungary**

**UNFC NATIONAL AGGREGATE REPORTS**

**UNFC Report Wizard**  
You can create UNFC aggregate reports with the Report Wizard.

[Add aggregate Report with Wizard](#)

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**UNFC AGGREGATE REPORT MATRIX**

[All Reports](#)

ESE Viability / Feasibility		F1			F2			F3			F4
Categories	Subcategories	F 1.1	F1.2	F1.3	F 2.1	F2.2	F2.3	F 3.1	F3.2	F3.3	-
E1	E1.1										
	E1.2										
E2											
E3	E3.2										
	E3.3										

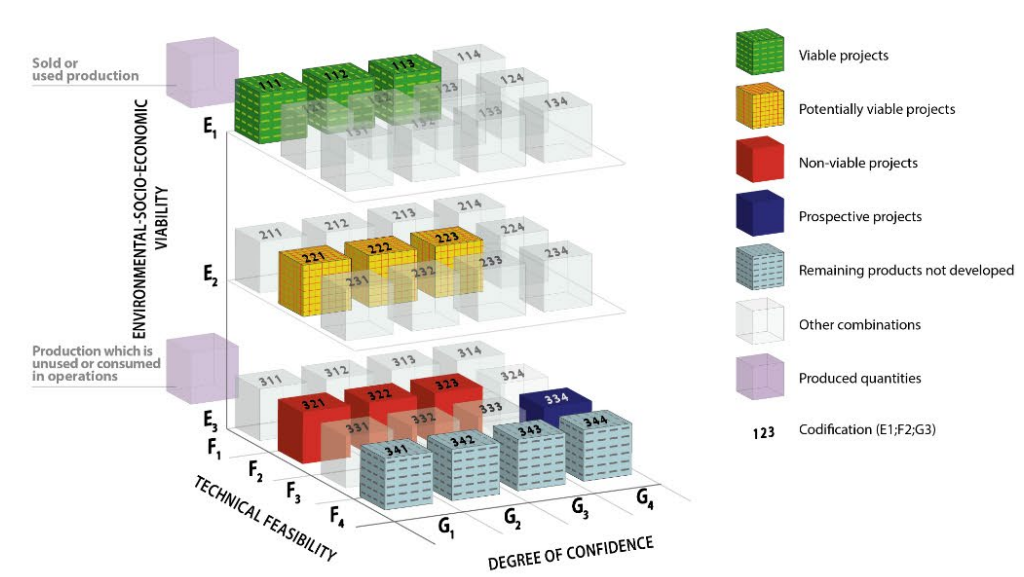
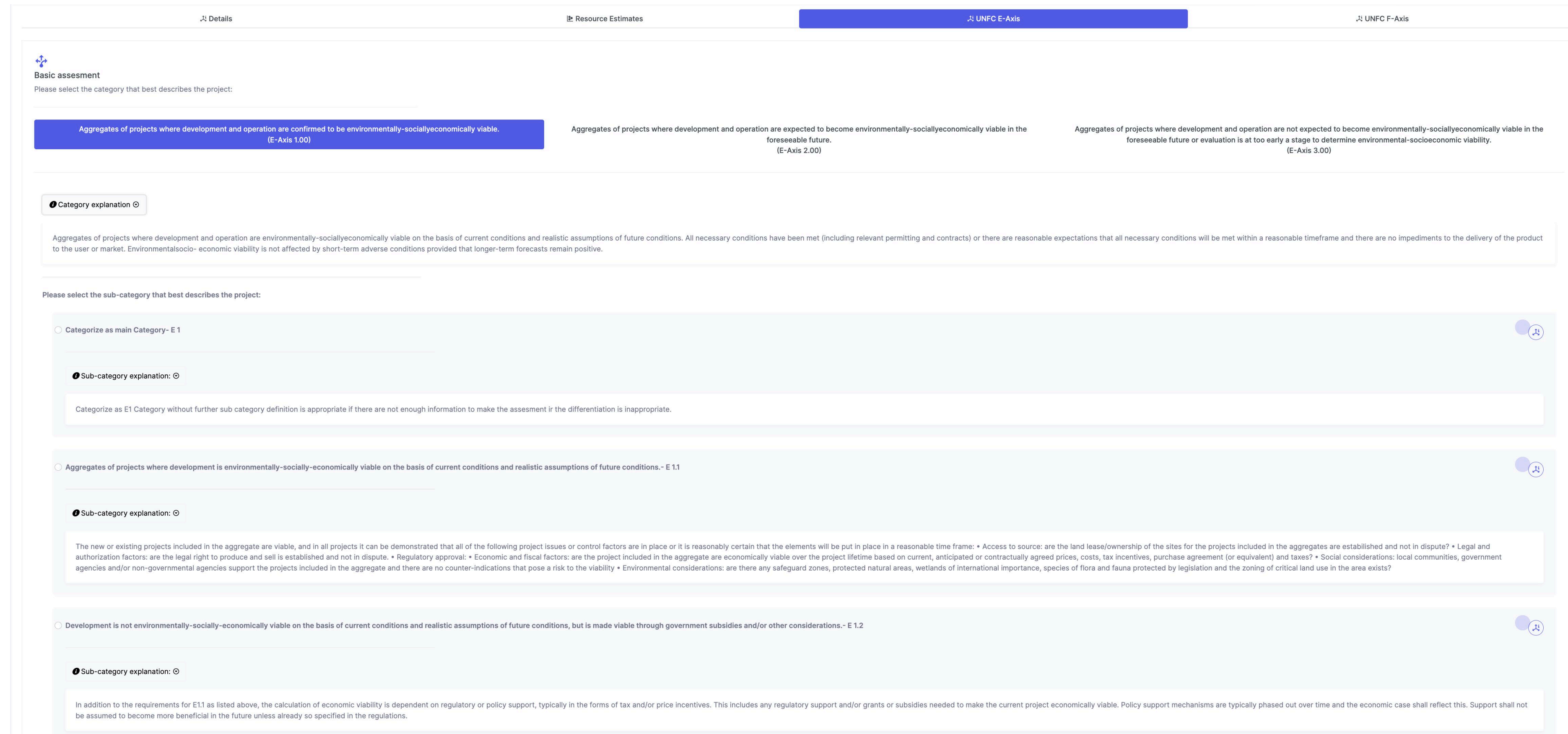


Image by United Nations Economic Commission for Europe

# UNFC Education

**Introducing the UNFC Education Report Wizard** – our latest module boasts an advanced wizard and tailored instructions to streamline the submission of standard UNFC and national aggregate reports.

- Experience intuitive guided reporting
- Navigate decision trees effortlessly with our superb UI
- Access in-depth guidance and UNFC expertise at your fingertips



The screenshot displays the 'UNFC E-Axis' step of a report wizard. At the top, there are navigation tabs: 'Details', 'Resource Estimates', 'UNFC E-Axis' (which is highlighted in blue), and 'UNFC F-Axis'. Below the tabs, the main content area is titled 'Basic assessment' and asks the user to 'Please select the category that best describes the project:'. Three main categories are presented as buttons:

- Aggregates of projects where development and operation are confirmed to be environmentally-socially-economically viable. (E-Axis 1.00)** - This button is highlighted in blue.
- Aggregates of projects where development and operation are expected to become environmentally-socially-economically viable in the foreseeable future. (E-Axis 2.00)
- Aggregates of projects where development and operation are not expected to become environmentally-socially-economically viable in the foreseeable future or evaluation is at too early a stage to determine environmental-socioeconomic viability. (E-Axis 3.00)

Below the category selection, there is a 'Category explanation' section with a dropdown arrow. The explanation for the selected category (E 1.00) reads: 'Aggregates of projects where development and operation are environmentally-socially-economically viable on the basis of current conditions and realistic assumptions of future conditions. All necessary conditions have been met (including relevant permitting and contracts) or there are reasonable expectations that all necessary conditions will be met within a reasonable timeframe and there are no impediments to the delivery of the product to the user or market. Environmental-socio-economic viability is not affected by short-term adverse conditions provided that longer-term forecasts remain positive.'

Next, the user is asked to 'Please select the sub-category that best describes the project:'. Three sub-category options are shown, each with a dropdown arrow for further explanation:

- Categorize as main Category- E 1
- Aggregates of projects where development is environmentally-socially-economically viable on the basis of current conditions and realistic assumptions of future conditions.- E 1.1
- Development is not environmentally-socially-economically viable on the basis of current conditions and realistic assumptions of future conditions, but is made viable through government subsidies and/or other considerations.- E 1.2

The 'Sub-category explanation' for the selected 'Categorize as main Category- E 1' option reads: 'Categorize as E1 Category without further sub category definition is appropriate if there are not enough information to make the assessment or the differentiation is inappropriate.'

The 'Sub-category explanation' for the 'E 1.1' option reads: 'The new or existing projects included in the aggregate are viable, and in all projects it can be demonstrated that all of the following project issues or control factors are in place or it is reasonably certain that the elements will be put in place in a reasonable time frame: • Access to source: are the land lease/ownership of the sites for the projects included in the aggregates are established and not in dispute? • Legal and authorization factors: are the legal right to produce and sell is established and not in dispute. • Regulatory approval: • Economic and fiscal factors: are the project included in the aggregate are economically viable over the project lifetime based on current, anticipated or contractually agreed prices, costs, tax incentives, purchase agreement (or equivalent) and taxes? • Social considerations: local communities, government agencies and/or non-governmental agencies support the projects included in the aggregate and there are no counter-indications that pose a risk to the viability • Environmental considerations: are there any safeguard zones, protected natural areas, wetlands of international importance, species of flora and fauna protected by legislation and the zoning of critical land use in the area exists?'

The 'Sub-category explanation' for the 'E 1.2' option reads: 'In addition to the requirements for E1.1 as listed above, the calculation of economic viability is dependent on regulatory or policy support, typically in the forms of tax and/or price incentives. This includes any regulatory support and/or grants or subsidies needed to make the current project economically viable. Policy support mechanisms are typically phased out over time and the economic case shall reflect this. Support shall not be assumed to become more beneficial in the future unless already so specified in the regulations.'

# Thank You !

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## References and citations:

- **UNECE 2022. UNFC GUIDANCE EUROPE - Guidance for the Application of the United Nations Framework Classification for Resources (UNFC) for Mineral and Anthropogenic Resources in Europe**
- **Guidance for the classification and comparison of national resource estimates – Jeremy Webb, Milan Poczik**
- **Sinegon RP Cloud <https://sinegon.com/sinegon-rp-cloud-2/>**
- **Sinegon UNFC Bridging <https://sinegon.com/unfc-bridging/>**

