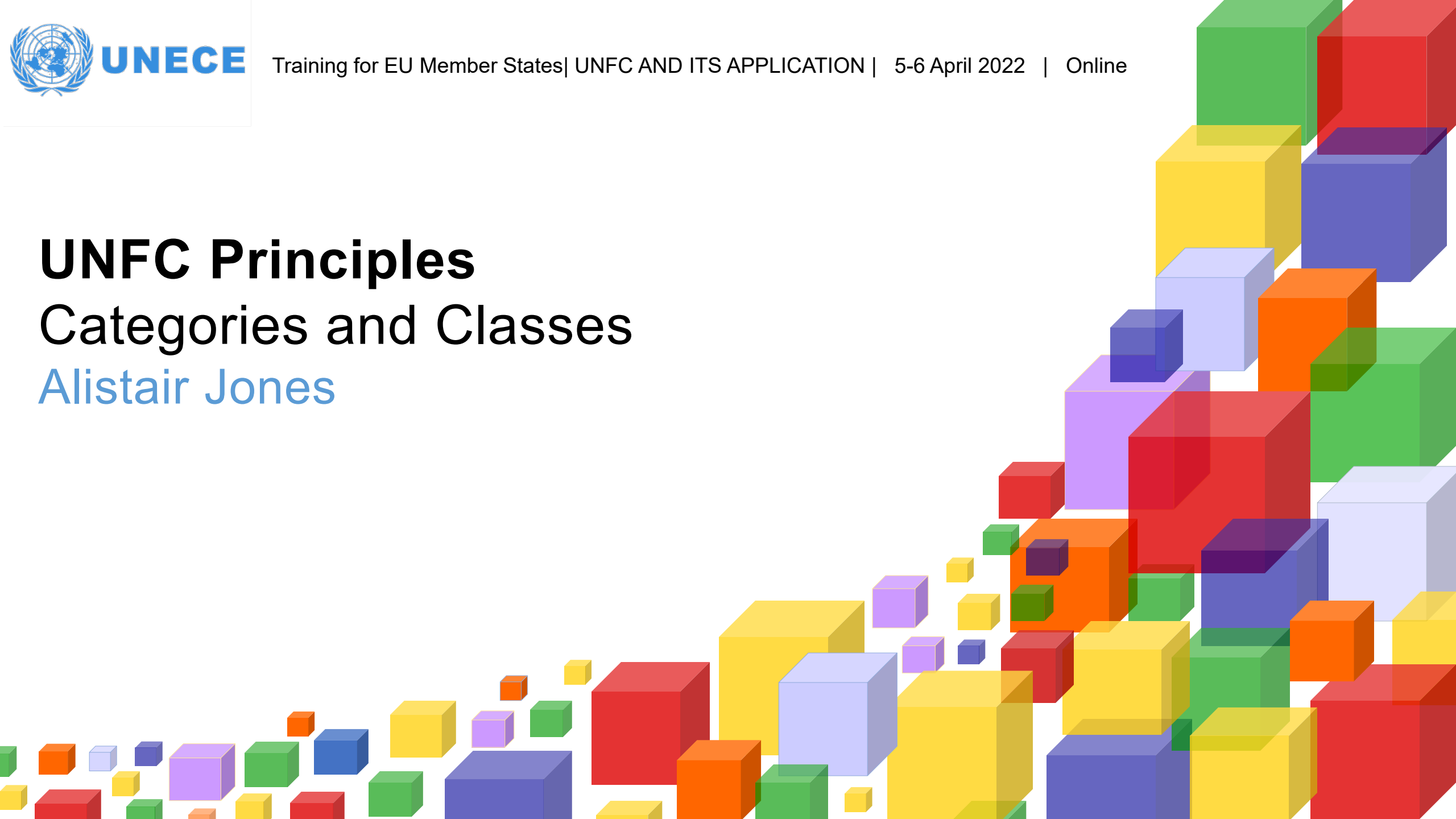


UNFC Principles

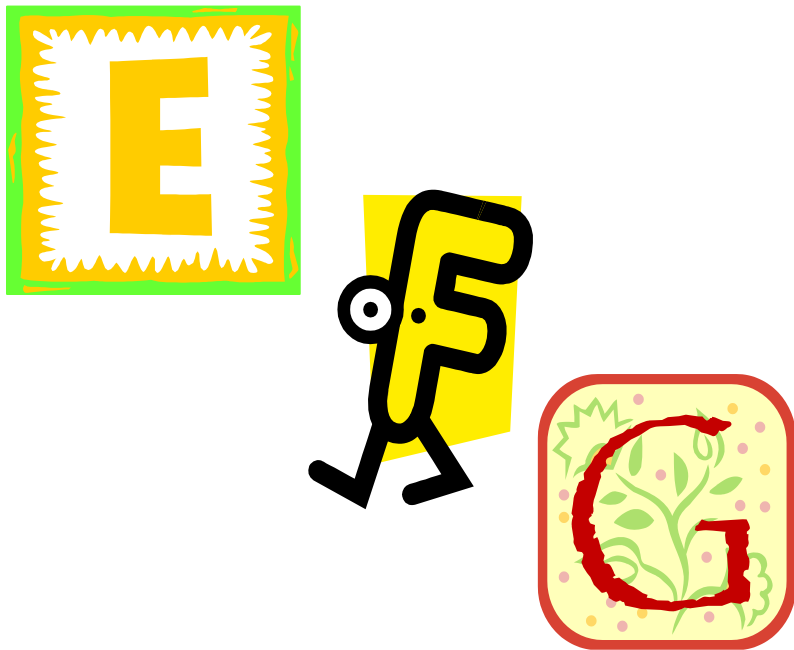
Categories and Classes

Alistair Jones



Classification Framework

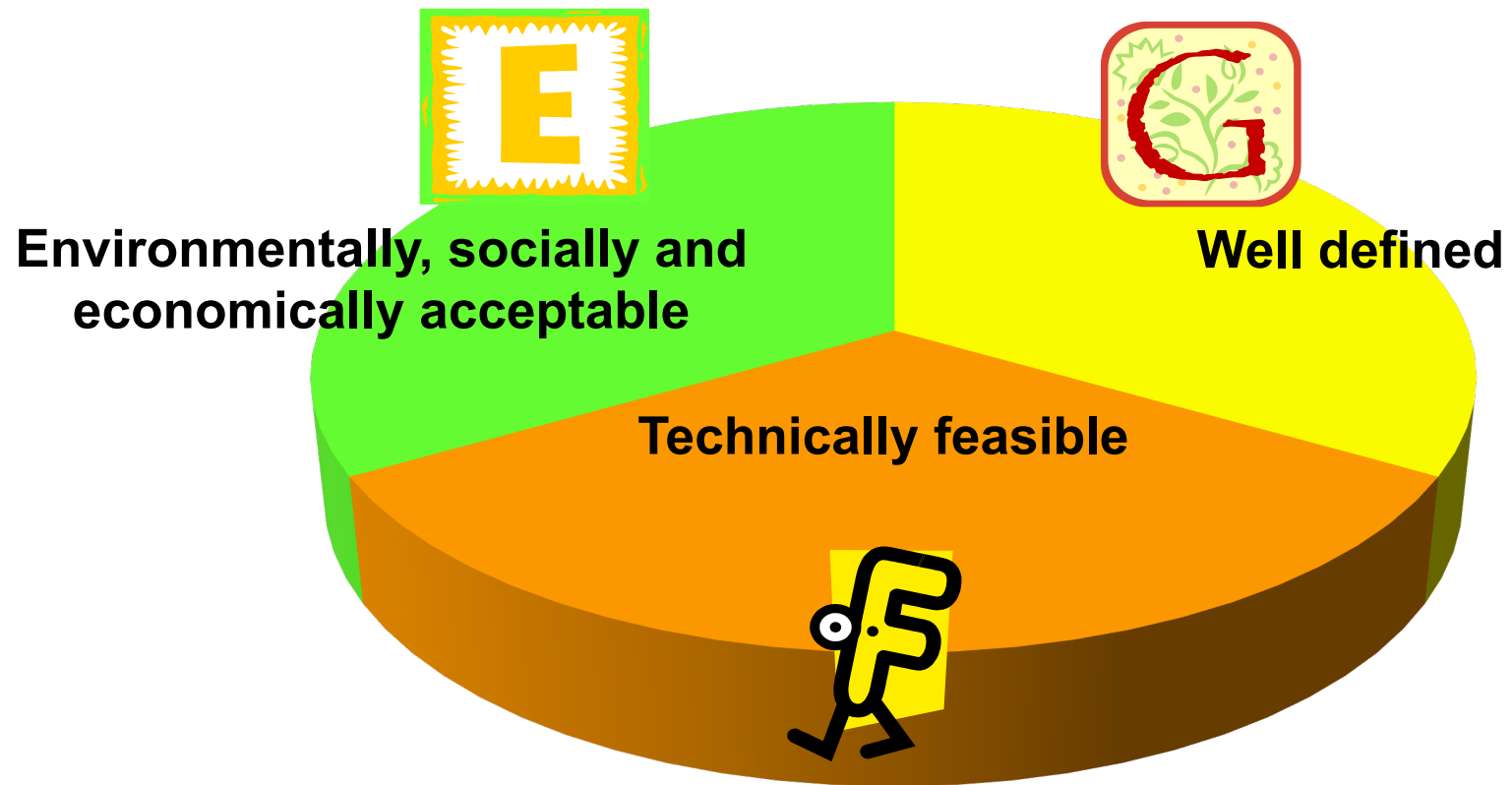
3 criteria



- Based on 3 fundamental criteria
 - Environmental-socio-economic viability
 - Technical feasibility
 - Degree of confidence

Why 3 criteria?

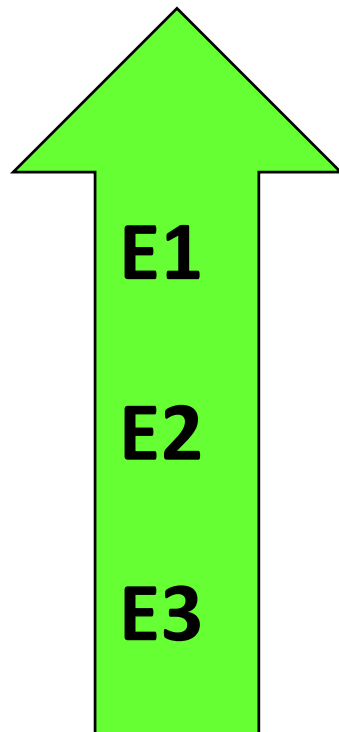
To be viable a project must be ...



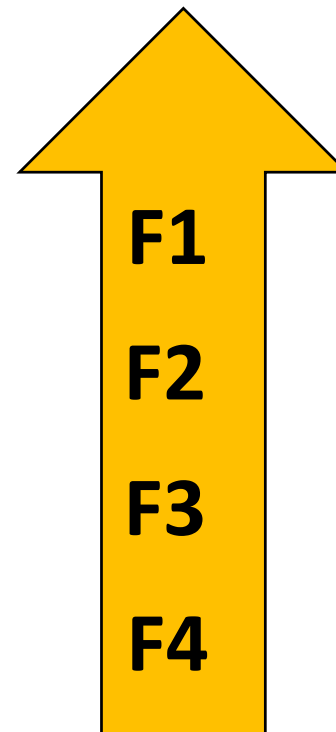
Project Maturity and Confidence in Estimates

Coding based on the 3 criteria

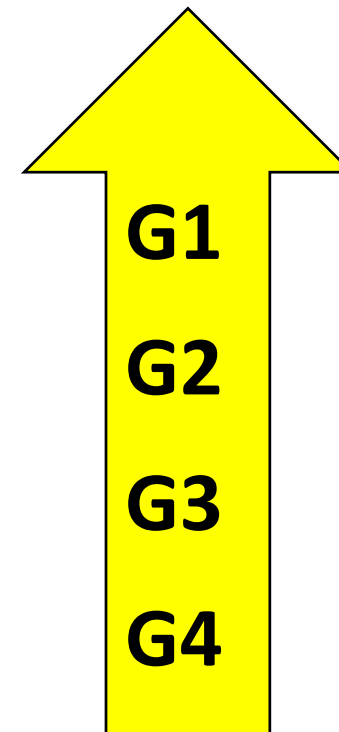
Environmental-socio-economic feasibility



Technical feasibility



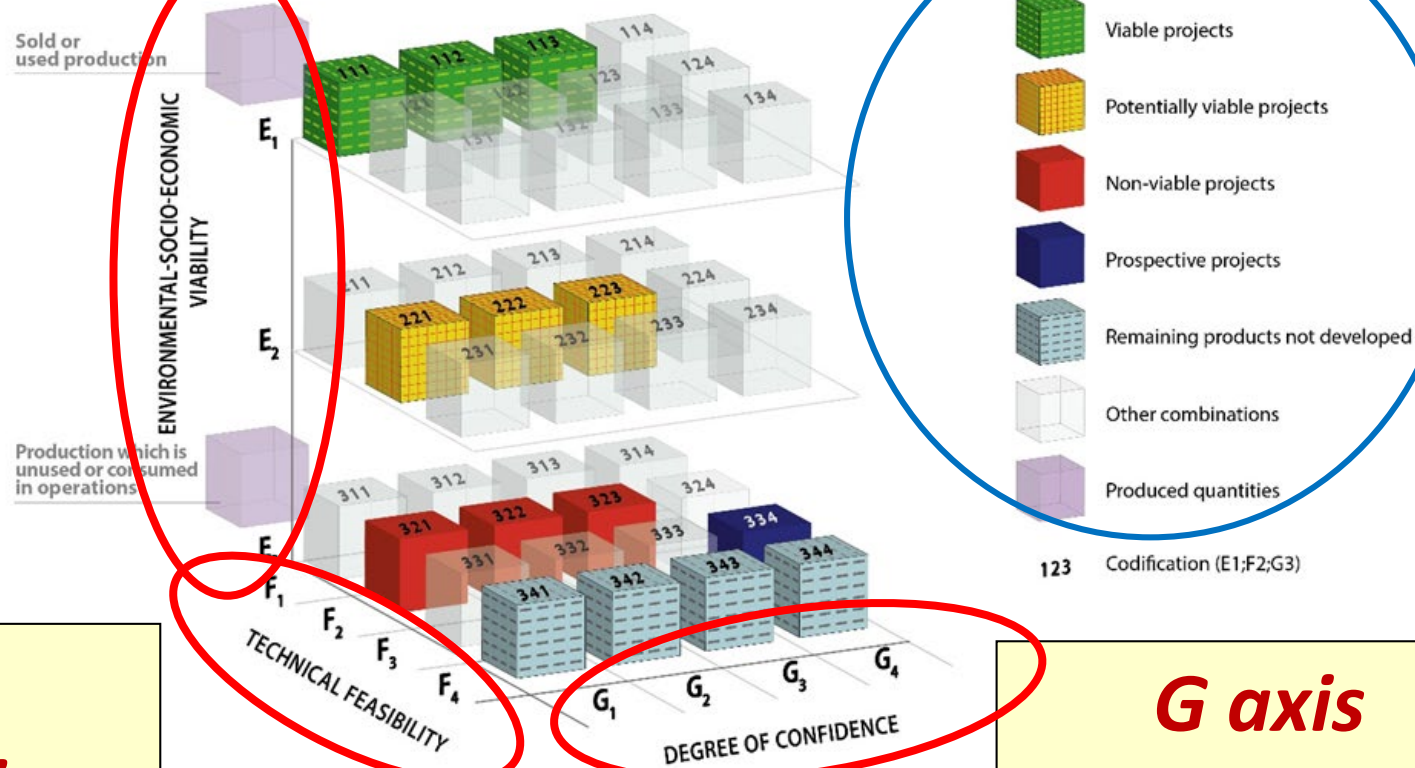
Degree of confidence



Categories and Classes

Codification

E axis categories



Classes

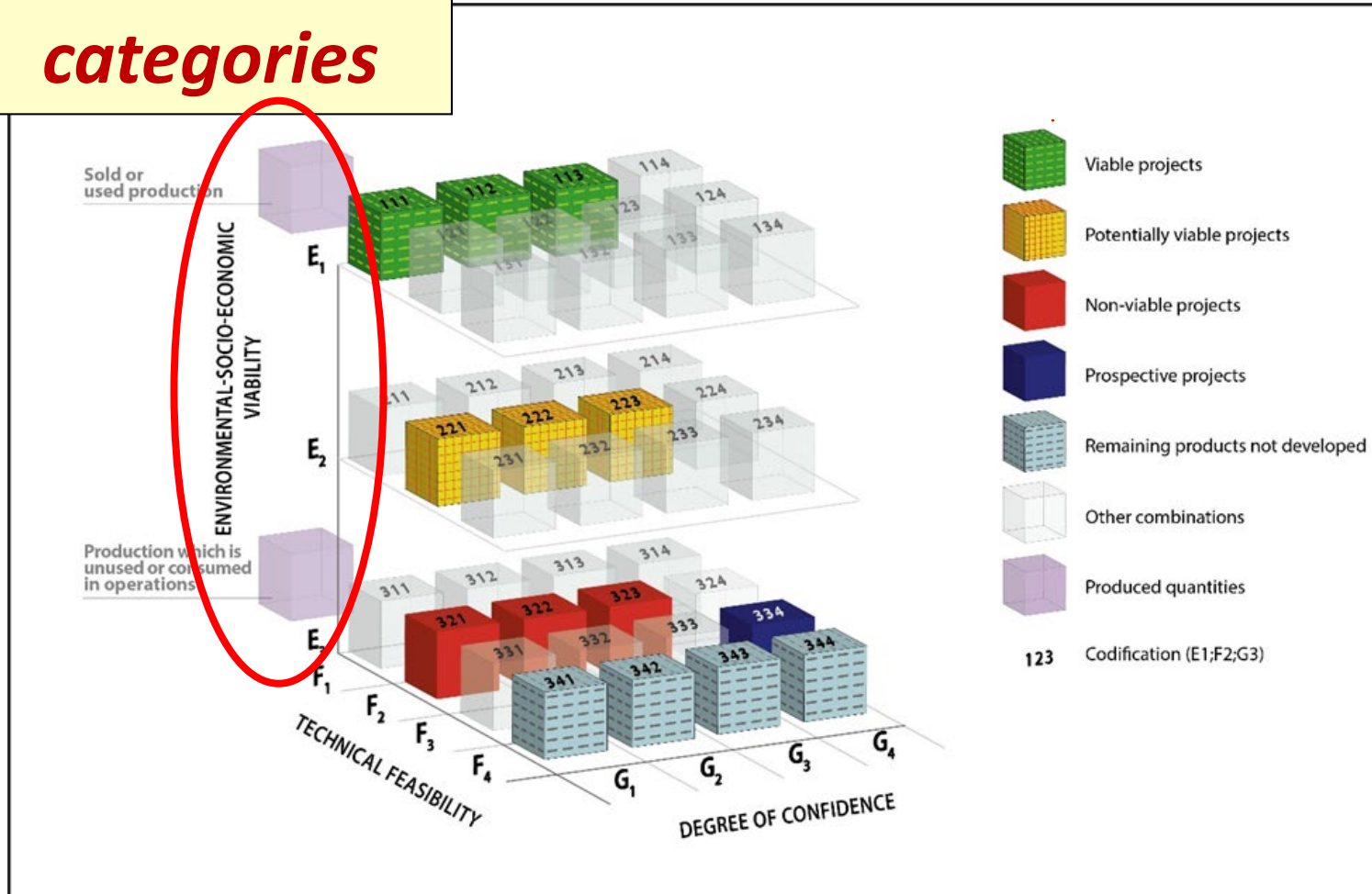
F axis categories

G axis categories

Category definitions

E axis

E axis categories



E axis category definitions

Degree of favourability of environmental, social and economic conditions in establishing viability

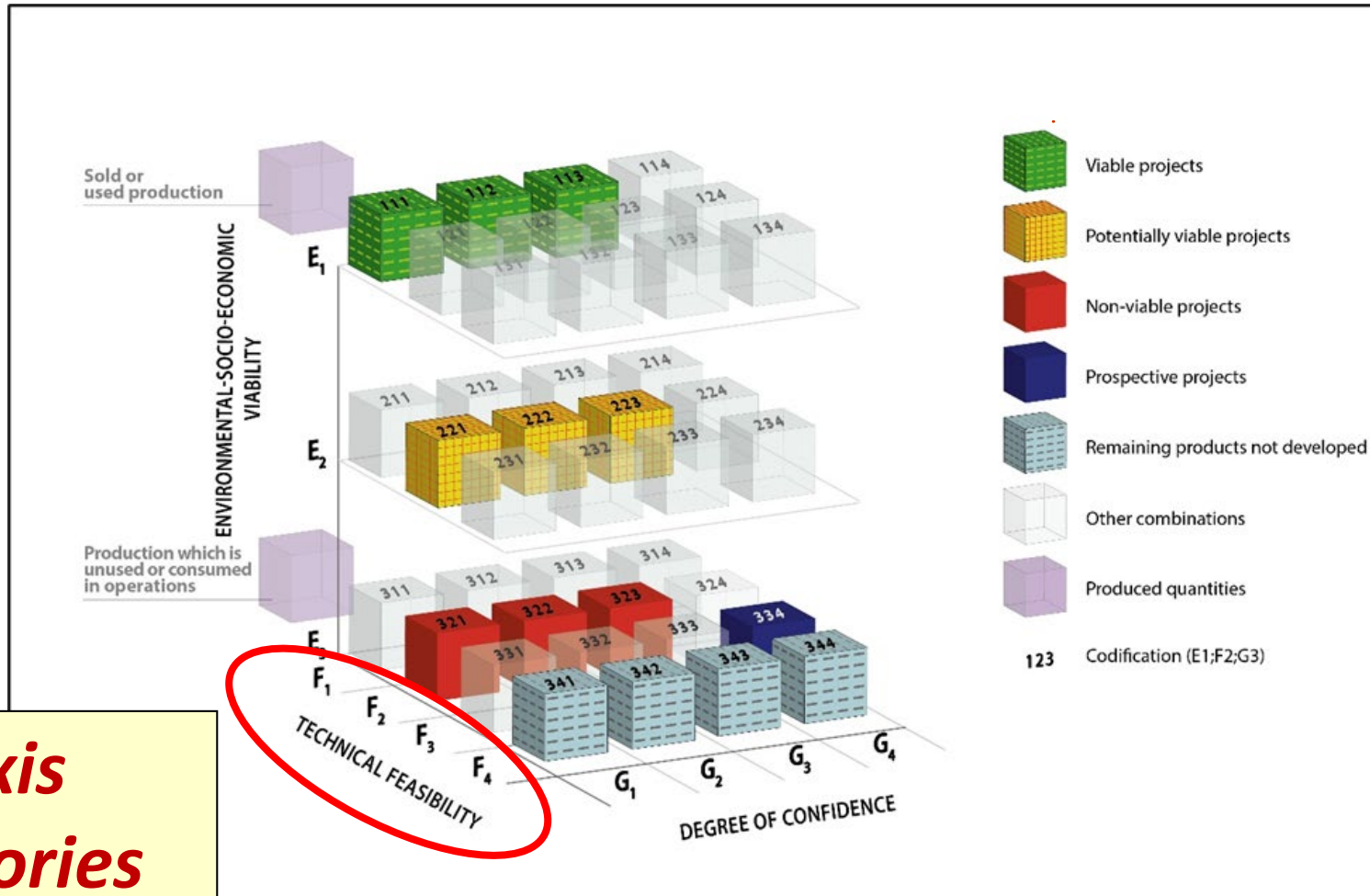
- Includes consideration of market prices and relevant legal, regulatory, social, environmental and contractual conditions
- E1 is “best”

Category	Definition
E1	Development and operation are confirmed to be environmentally-socially-economically viable.
E2	Development and operation are expected to become environmentally-socially-economically viable in the foreseeable future.
E3	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-socio-economic viability.

Definitions should always be read in conjunction with supporting explanation (see UNFC 2019)

Category definitions

F axis



F axis categories

F axis category definitions

Maturity of technology, studies and commitments necessary to implement the project

- Projects range from early conceptual studies through to a fully developed project that is producing

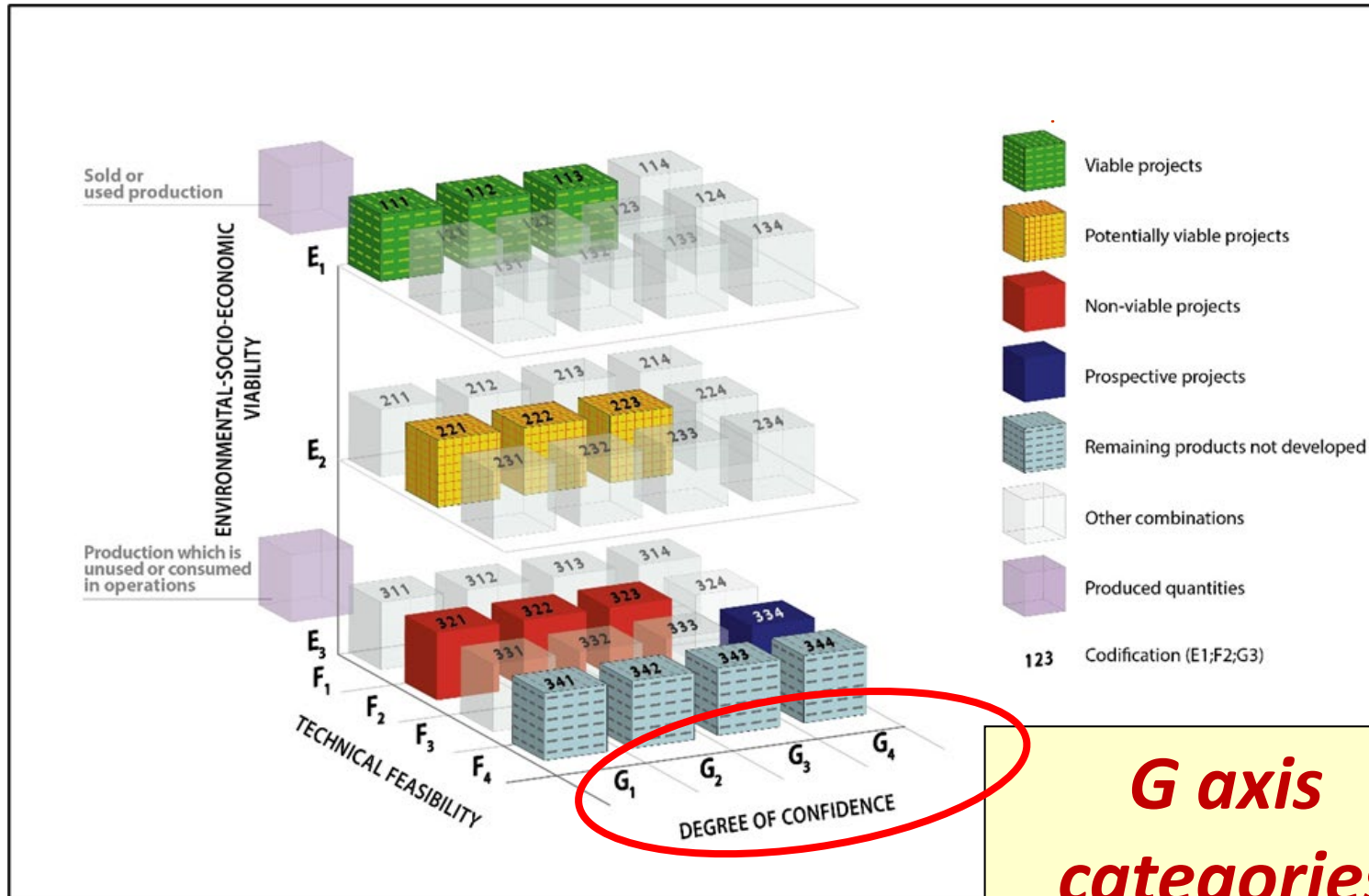
- F1 is “best”

Category	Definition
F1	Technical feasibility of a development project has been confirmed.
F2	Technical feasibility of a development project is subject to further evaluation.
F3	Technical feasibility of a development project cannot be evaluated due to limited technical data.
F4	No development project has been identified.

Definitions should always be read in conjunction with supporting explanation (see UNFC 2019)

Category definitions

G axis



G axis categories

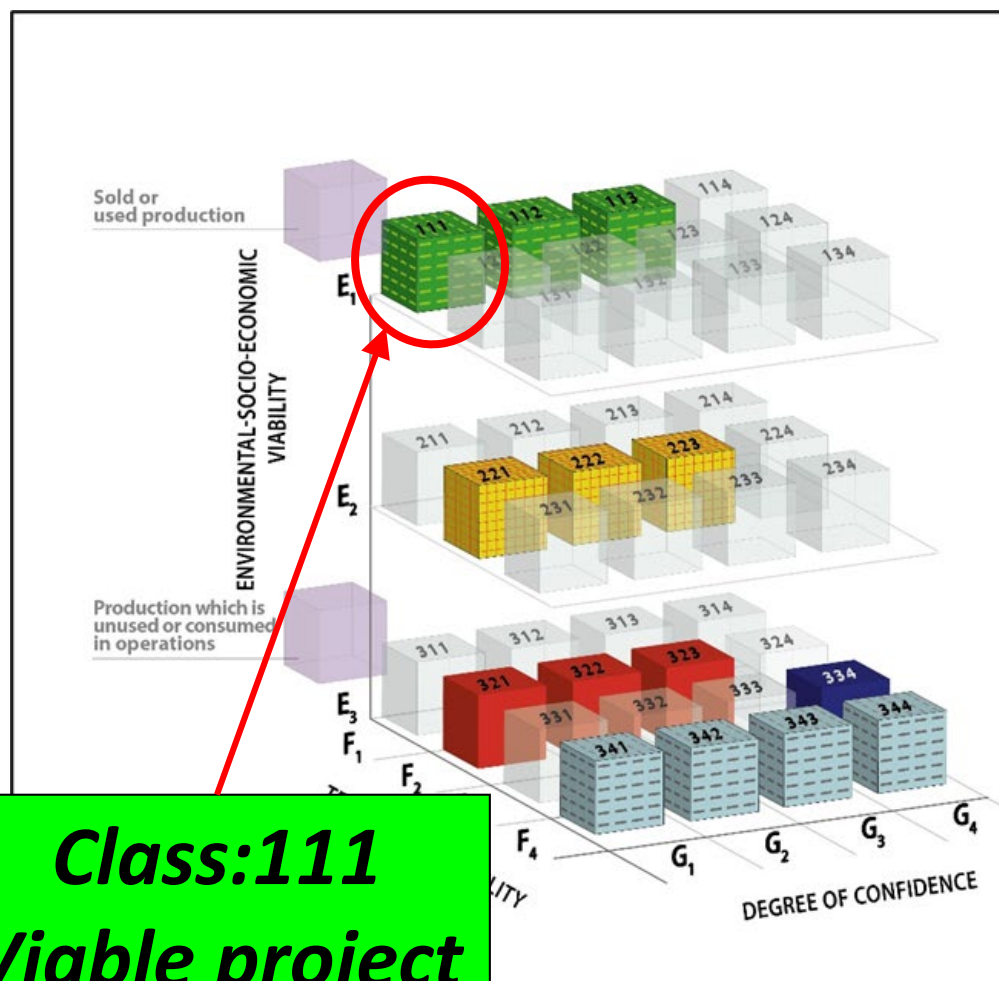
G axis category definitions

Degree of confidence in the estimate of the quantities of products from the project

- Projects range from early conceptual studies through to a fully developed project that is producing
- ~~G1 is “highest confidence”~~

Category	Definition
G1	Product quantity associated with a project that can be estimated with a high level of confidence.
G2	Product quantity associated with a project that can be estimated with a moderate level of confidence.
G3	Product quantity associated with a project that can be estimated with a low level of confidence.
G4	Product quantity associated with a Prospective Project, estimated primarily on indirect evidence.

Definitions should always be read in conjunction with supporting explanation (see UNFC 2019)



Class:111
Viable project

Category	Definition
E1	Development and operation are confirmed to be environmentally-socially-economically

Category	Definition
F1	Technical feasibility of a development project has been confirmed.

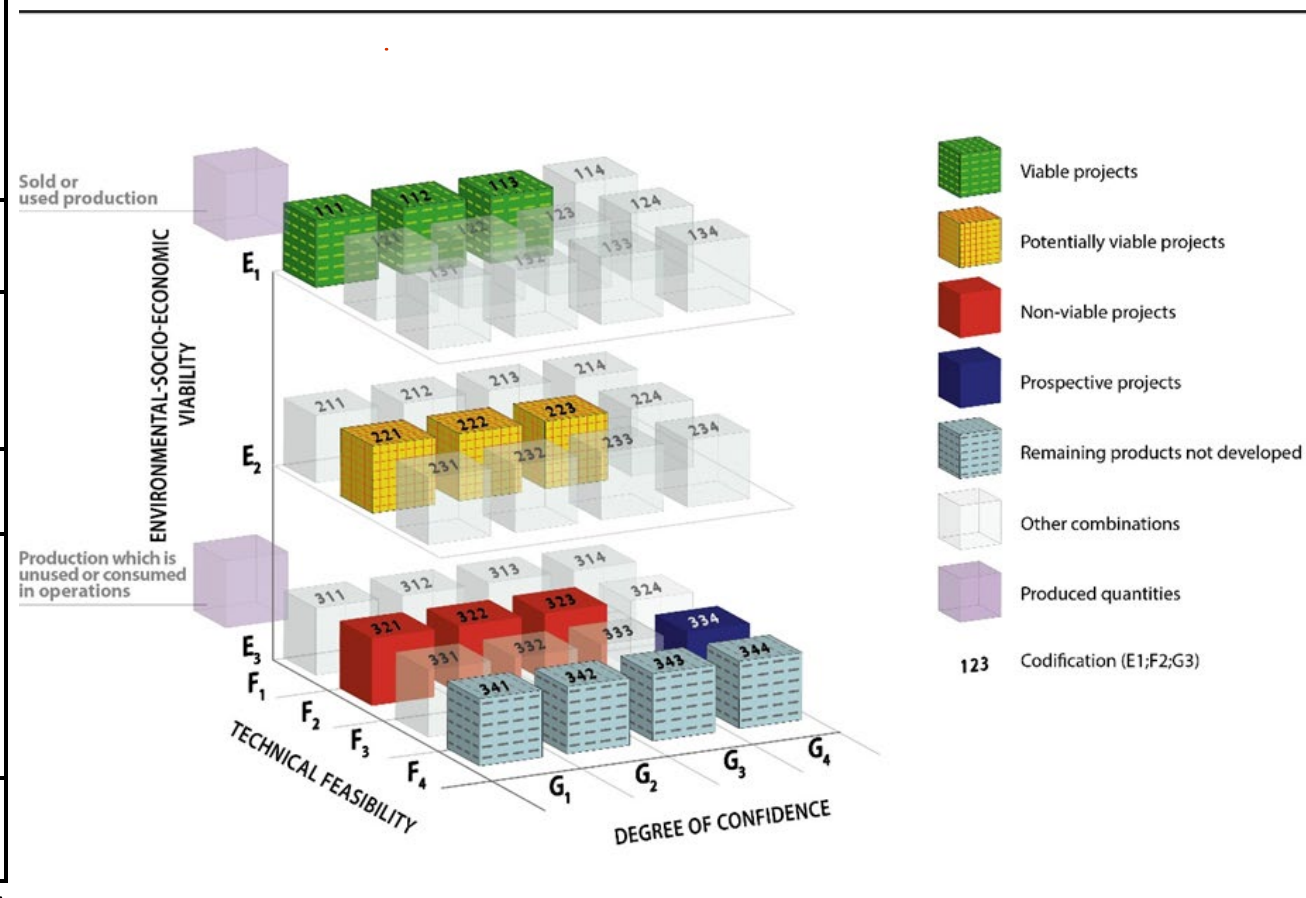
Category	Definition
G1	Product quantity associated with a project that can be estimated with a high level of confidence.

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2D or 3D representation

Total Products

Produced	Sold or used production			
	Production which is unused or consumed in operations ^a			
	Class	Minimum Categories		
		E	F	G ^b
The project's environmental-socio-economic viability and technical feasibility has been confirmed	Viable Projects ^c	1	1	1, 2, 3
The project's environmental-socio-economic viability and/or technical feasibility has yet to be confirmed	Potentially Viable Projects ^d	2 ^e	2	1, 2, 3
	Non-Viable Projects ^f	3	2	1, 2, 3
Remaining products not developed from identified projects ^g		3	4	1, 2, 3
There is insufficient information on the source to assess the project's environmental-socio-economic viability and technical feasibility	Prospective Projects	3	3	4
Remaining products not developed from prospective projects ^g		3	4	4



Refer to UNFC (2019) Fig 2, for important explanatory notes



UNFC Classes Defined by Categories and Sub-categories

Total Products	Produced	Sold or used production				
		Production which is unused or consumed in operations				
	Class	Sub-class	Categories			
			E	F	G	
Known Sources	Viable Projects	On Production	1	1.1	1, 2, 3	
		Approved for Development	1	1.2	1, 2, 3	
		Justified for Development	1	1.3	1, 2, 3	
	Potentially Viable Projects	Development Pending	2 ^b	2.1	1, 2, 3	
		Development On Hold	2	2.2	1, 2, 3	
	Non-Viable Projects	Development Unclassified	3.2	2.2	1, 2, 3	
		Development Not Viable	3.3	2.3	1, 2, 3	
	Remaining products not developed from identified projects		3.3	4	1, 2, 3	
Potential Sources	Prospective Projects	[No sub-classes defined]	3.2	3	4	
	Remaining products not developed from prospective projects		3.3	4	4	

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Sub-categories and classes provide more resolution

Refer to UNFC (2019) Fig 3, for important explanatory notes



- **UNFC-2019 is a generic, principles-based system**
 - Applicable to solid minerals, anthropogenic resources, and a wide range of renewable and non-renewable resources
- **Based on three fundamental criteria**
 - Environmental-socio-economic viability
 - Technical feasibility
 - Degree of confidence
- **Each criterion is sub-divided into 3 or 4 defined categories**
 - Optional use of sub-categories for more granularity
 - Numerical category or sub-category for E, for F and for G
 - Axis letters can be dropped: e.g. Class 221
- **Consistent classification depends on careful and thorough application of category definitions and supporting explanations**
 - Definitions should always be read in conjunction with supporting explanation
 - Is there supporting evidence?
 - Bridging documents, decisions trees, flowcharts are useful short cuts, BUT check that the identified classification meets the definition and supporting explanation

Thank you!

Alistair Jones
Visiting Professor, Imperial College, UK

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Date 05 | 04 | 2022, Geneva

